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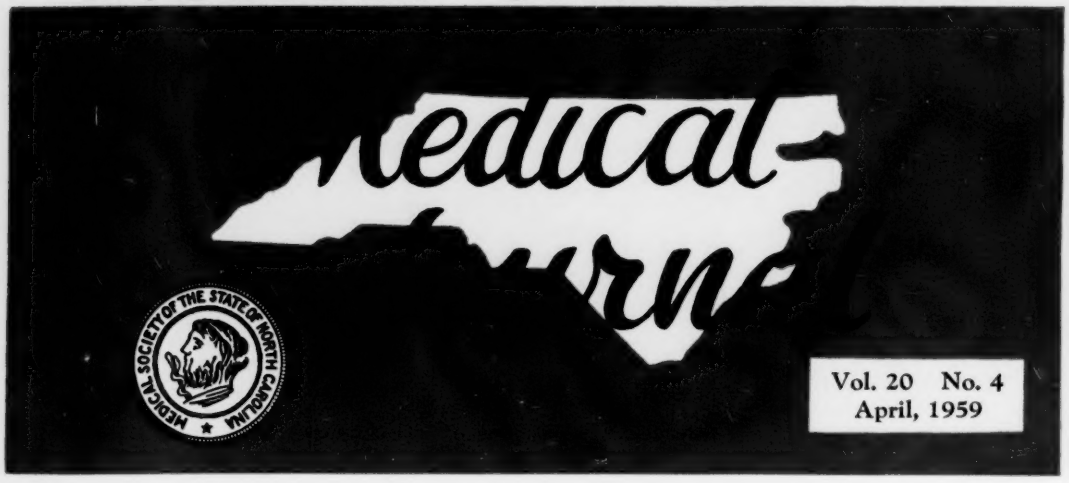

Vol. 20 No. 4
April, 1959

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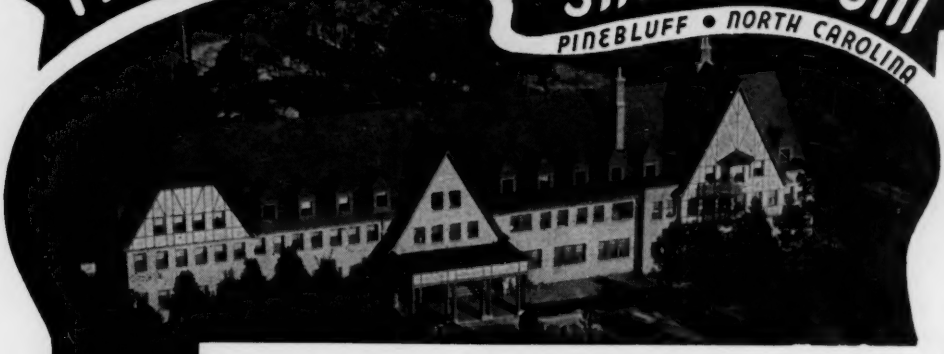

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NUMBER 4

APRIL, 1959

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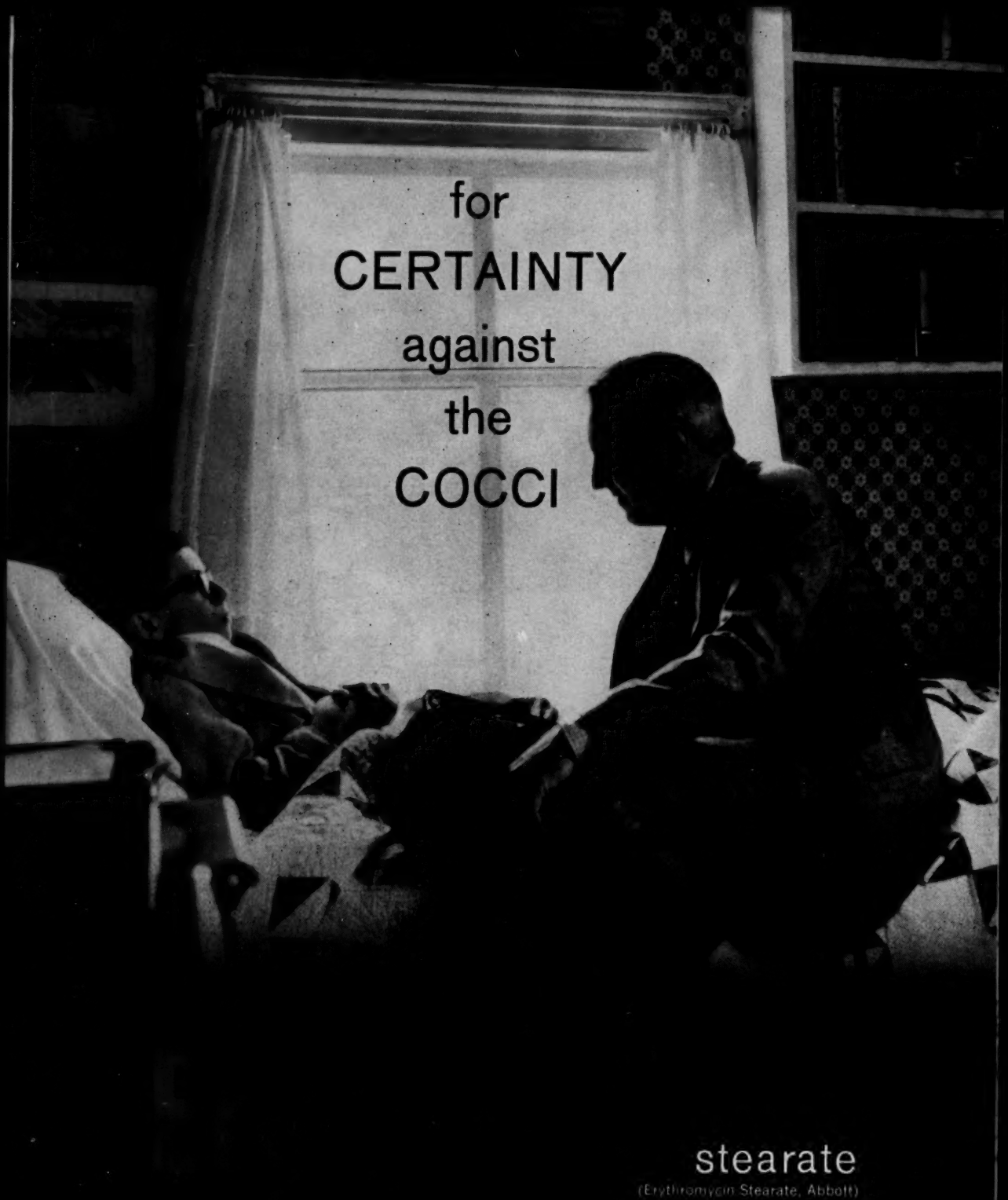

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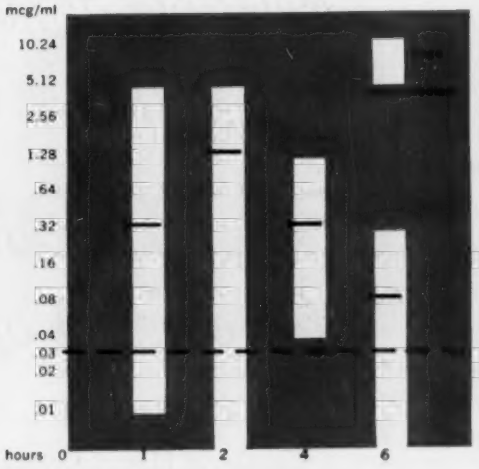

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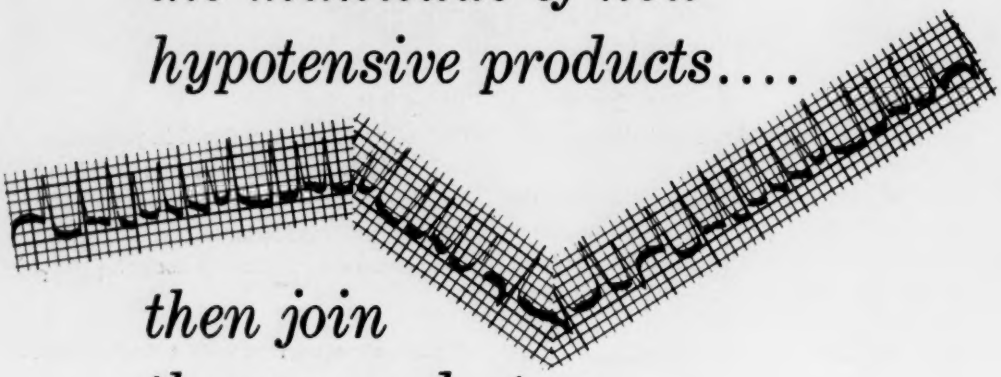

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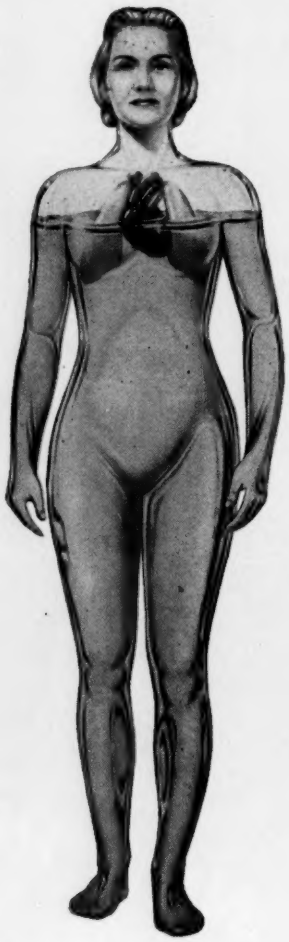

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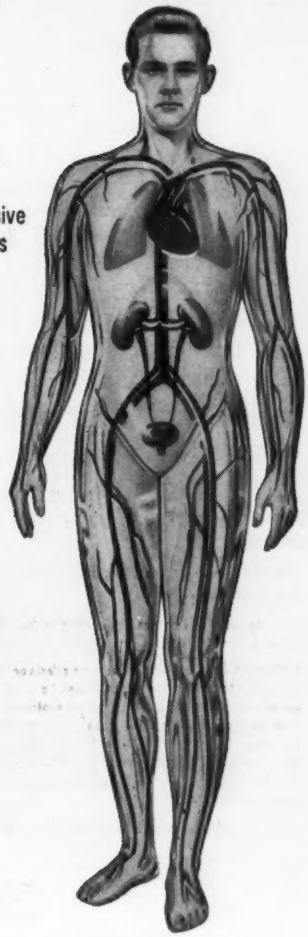

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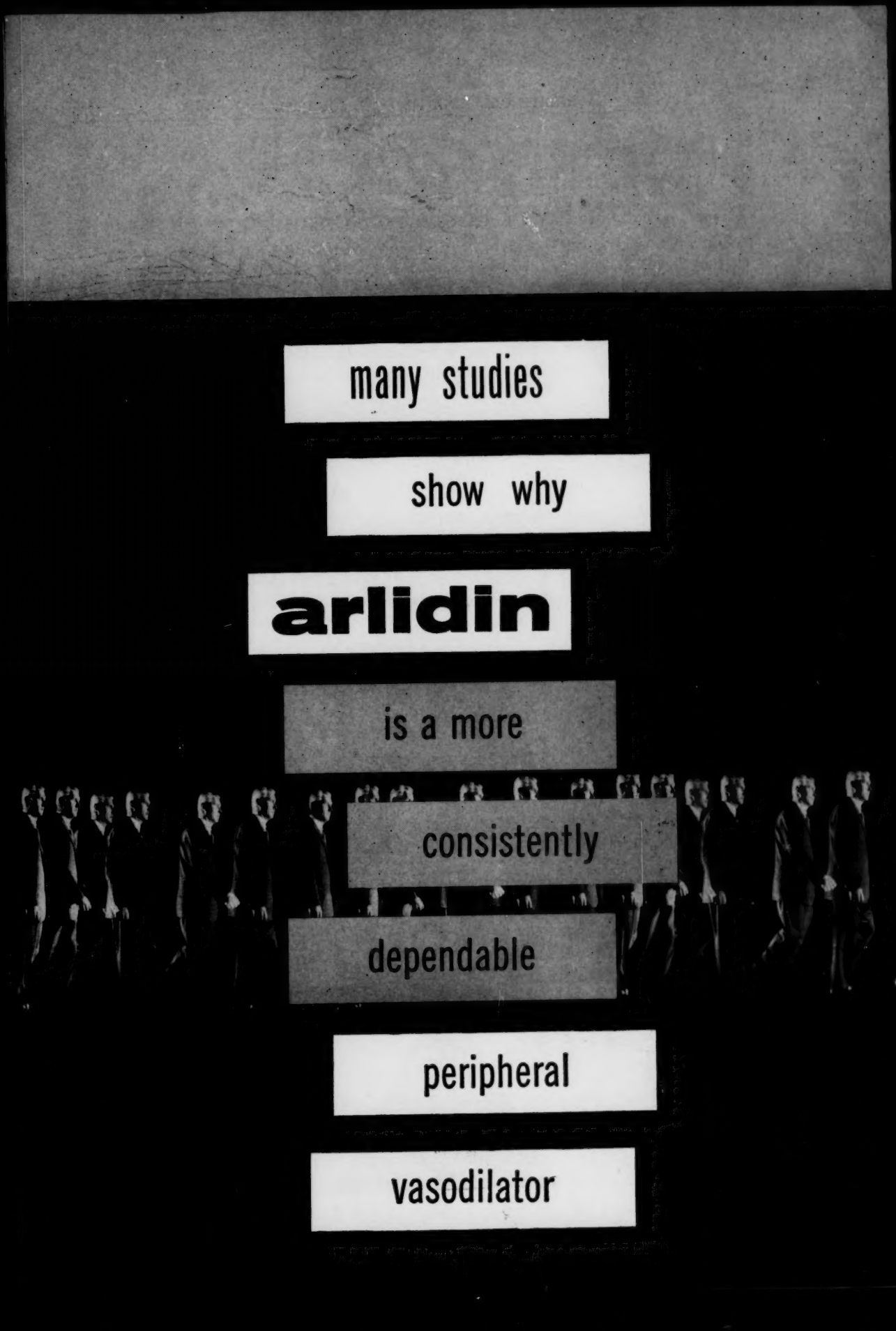
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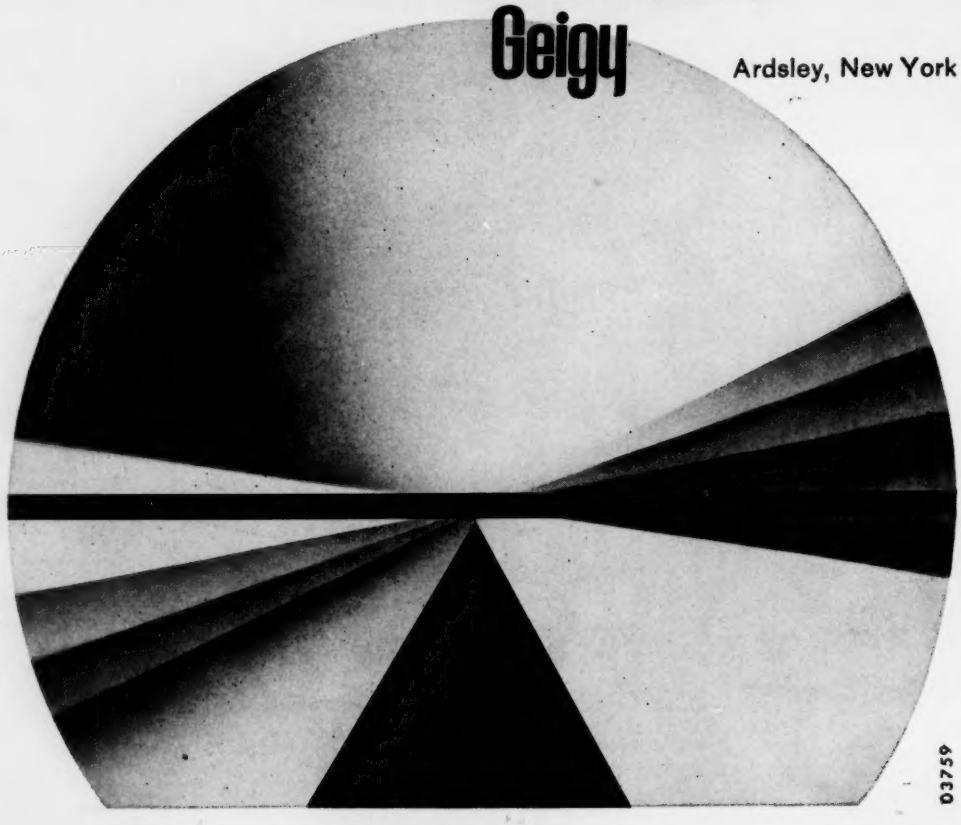

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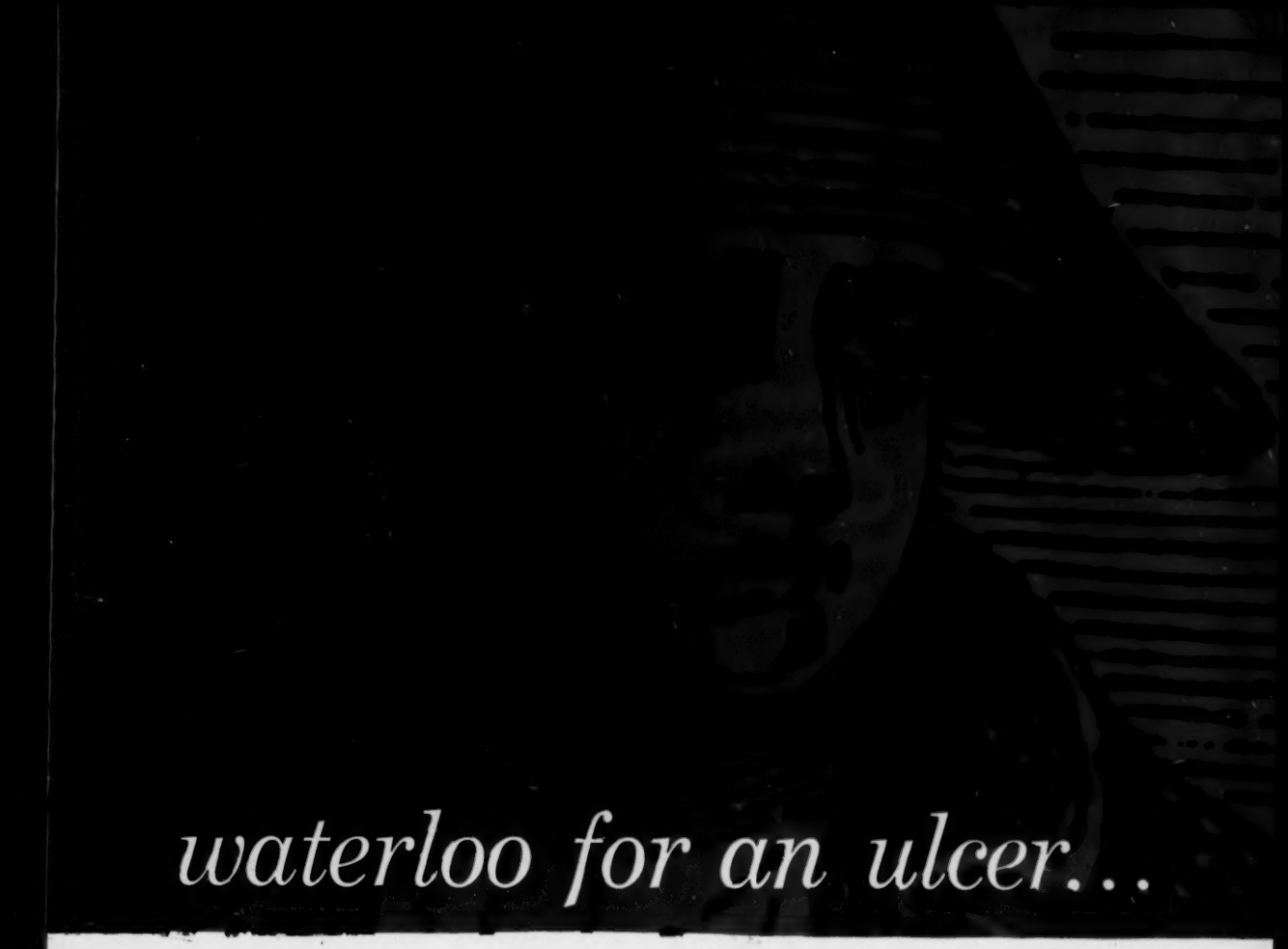

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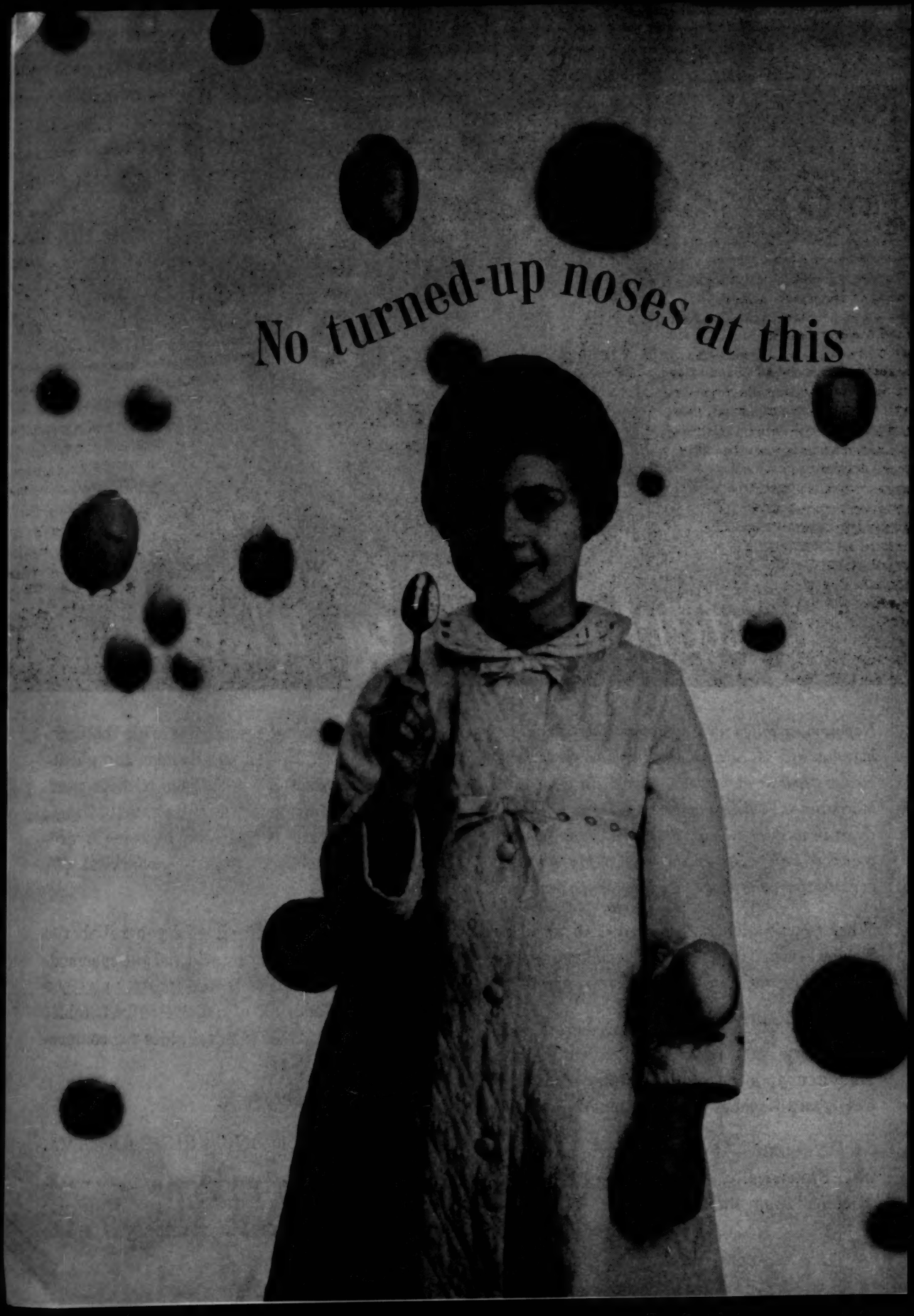
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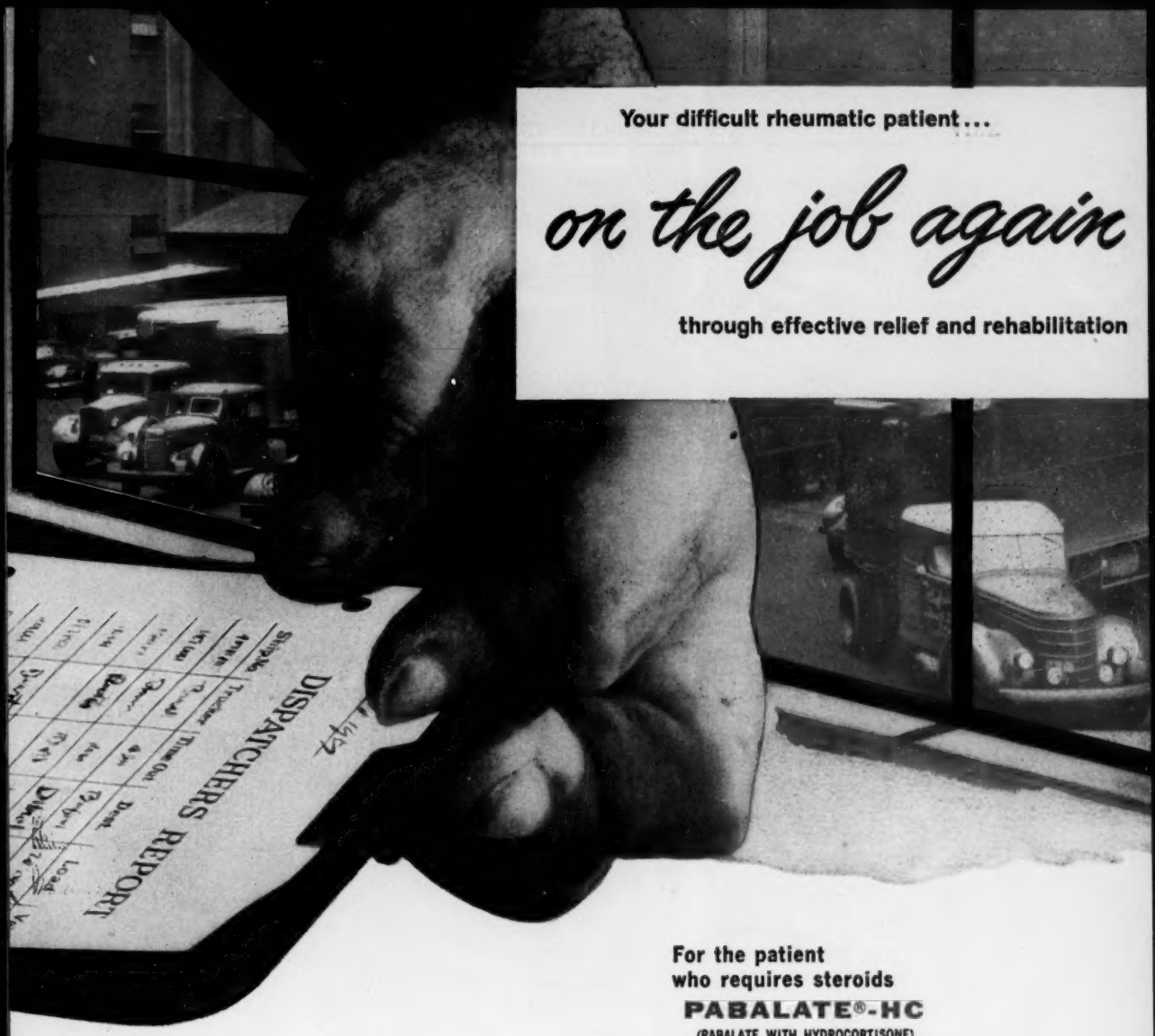

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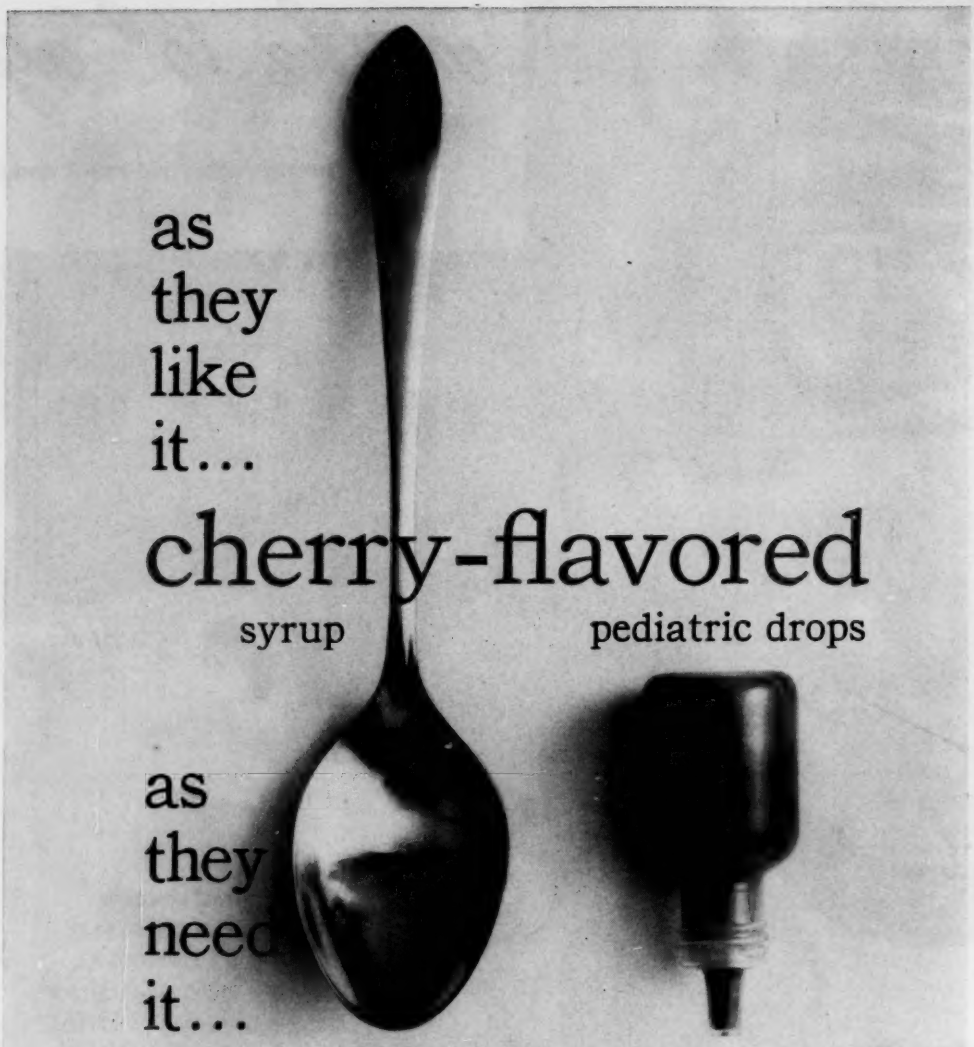

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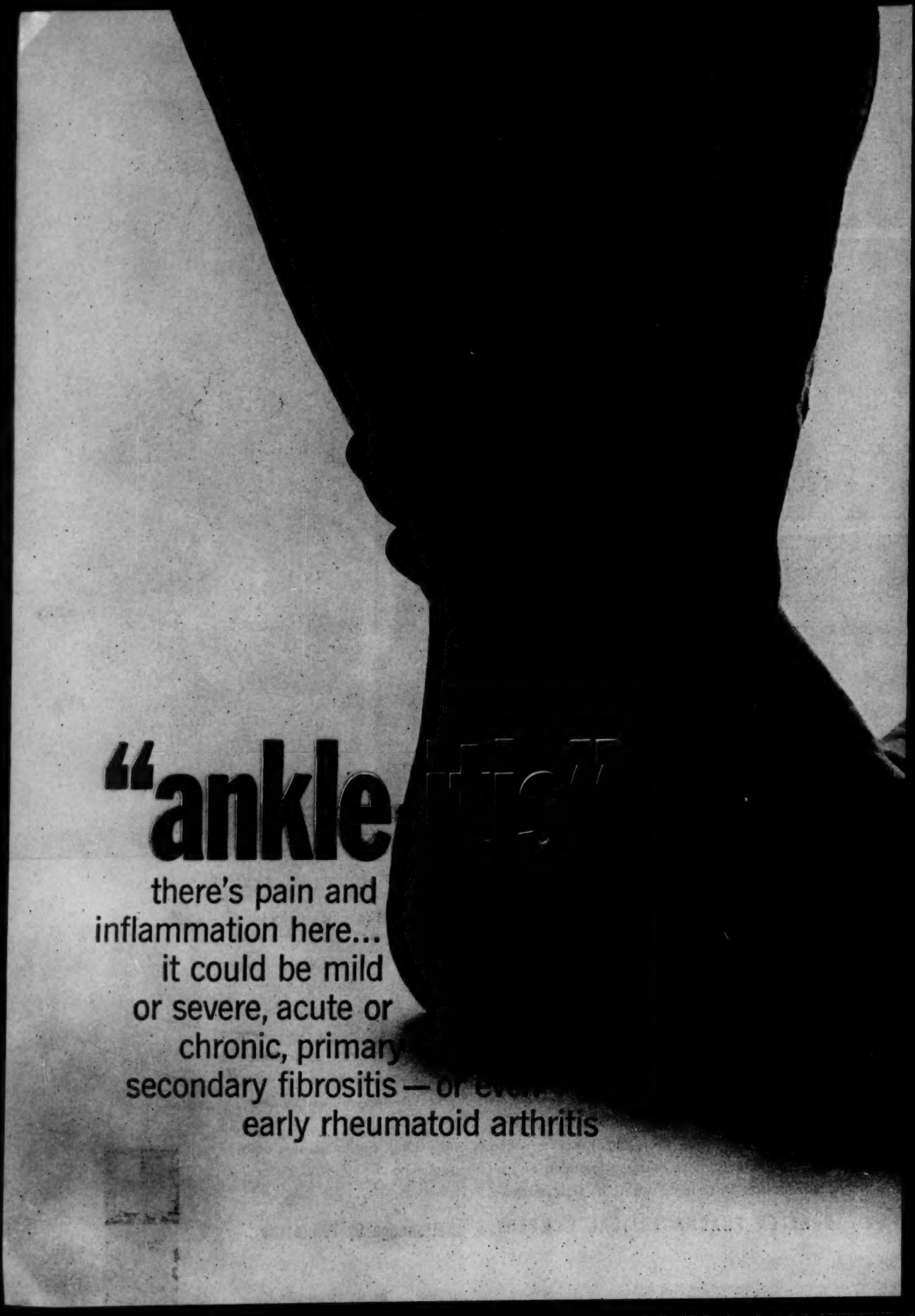
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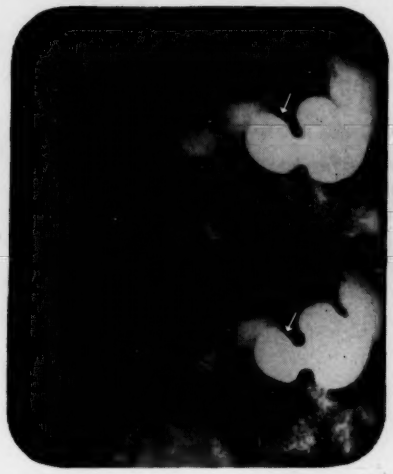
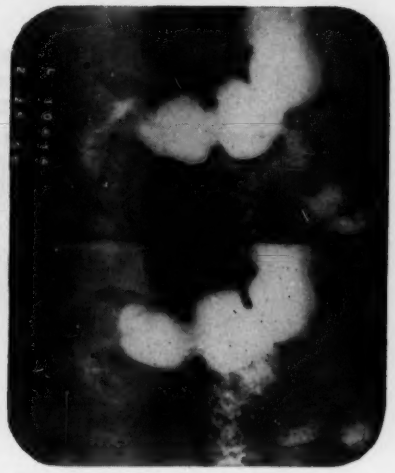
relieve the tension

—and control its G.I. sequelae



Patient A.S., age 53.
Intermittent crises of severe pain over 2 year period; hospital management with Sippy regimen provided relief of symptoms; however, symptoms recurred after each sojourn.



PATHIBAMATE *(Tabs. j.t.i.d. and H.S.);* prompt relief of symptoms. Radiograph (21 days later) confirms healing of minute lesser curvature gastric ulcer crater.

predictable results in the control of tension and G.I. trauma

Pathibamate®

Meprobamate with PATHILON® Tridihexethyl Chloride* LEDERLE

Used prophylactically in anticipation of periods of emotional stress, or therapeutically to relieve tension and curb hypermotility and hypersecretion, PATHIBAMATE is particularly well-formulated for the control of gastrointestinal disorders.

PATHIBAMATE combines Meprobamate (400 mg.) — the noted tranquilizer-muscle relaxant widely accepted for safe management of tension and anxiety states — and PATHILON (25 mg.) — an extremely well-tolerated anticholinergic, long noted for prompt symptomatic relief based on peripheral atropine-like action with few side effects.

Indications:
Duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis with gastrointestinal symptoms, gastric hypermotility.

Supplied:
Bottles of 100 and 1,000. Each tablet (yellow, ½-scored) contains Meprobamate, 400 mg.; PATHILON Tridihexethyl Chloride, 25 mg.

Administration and Dosage:
1 tablet three times a day at mealtimes and 2 tablets at bedtime. Adjust dosage to patient response. Contraindicated in glaucoma, pyloric obstruction, and obstruction of the urinary bladder neck.

Also Available: PATHILON in four forms — *Tablets* of 25 mg., plain (pink) or with *phenobarbital*, 15 mg. (blue);
Parenteral — 10 mg./cc. — 1 cc. ampuls;
Pediatric Drops — 5 mg./cc. — dropper vials of 15 cc.

*PATHILON is now offered as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could interfere with the results of certain thyroid function tests.

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

B. I. D.

ULCER CONTROL

all day

NEW

DARICON*

oxyphencyclimine hydrochloride

TABLETS

all night

patient comfort

Natural Prolonged Action–The action of DARICON, a more potent and better tolerated anticholinergic, is consistently prolonged because it has a unique chemical structure and is not dependent on "mechanical" means (e.g., special coating, adsorption on ion-exchange resin).

In addition to peptic ulcer, DARICON is also indicated for other gastrointestinal disorders characterized by hypersecretion, hypermotility and spasm (e.g., functional bowel syndrome, chronic nonspecific ulcerative colitis and biliary tract disease).

Dosage: 10 mg. b.i.d. (morning and evening). **Supply:** Tablets, 10 mg., white, scored. Bottles of 60 and 500.

*Trademark

EVEN REFRACTORY CASES RESPOND

Pfizer *Science for the world's well-being*

PFIZER LABORATORIES

Division, Chas. Pfizer & Co., Inc.

Brooklyn 6, N. Y.

. . . and one to grow on

A tiny tablet of REDISOL to stimulate the appetite — to help in the intake of food for growth.

REDISOL is crystalline vitamin B_{12}, an essential vitamin for growth and the fundamental metabolic processes.

Ideal for the growing child, the REDISOL tablet dissolves instantly on contact in the mouth, on food or in liquids.

Packaged in bottles hermetically sealed to keep the moisture out and to retain vitamin potency in 25 and 50 mcg. strengths, bottles of 36 and 100 — in 100 mcg. strength, bottles of 36, and in 250 mcg. strength, vials of 12.

Also available as a pleasant-tasting cherry-flavored elixir (5 mcg. per 5-cc. teaspoonful) and as REDISOL injectable, cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

REDISOL®

cyanocobalamin, Crystalline Vitamin B_{12}

MSD

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

REDISOL IS A TRADEMARK OF MERCK & CO., INC.

To the relief of musculoskeletal pain, new MEDAPRIN* adds restoration of function

Analgesics offer temporary relief of musculoskeletal pain, but they merely *mask* pain rather than getting at its *cause*. New Medaprin, in addition to bringing about prompt subjective improvement, promotes the *restoration of normal function* by suppressing the inflammation that *causes* the pain.

Medaprin, Upjohn's new analgesic-steroid combination, contains aspirin plus Medrol,** the corticosteroid with *the best therapeutic ratio in the steroid field.*† Instead of suffering recurrent discomfort because of the "wearing off" of analgesics, the patient on Medaprin experiences a smooth, *extended* relief and more normal mobility.

Indications: Medaprin is indicated in mild-to-moderate rheumatic and musculoskeletal conditions, including rheumatoid arthritis, deltoid bursitis, low back pain, neuralgia, synovitis, fibromyositis, osteoarthritis, low back sprain, traumatic wrist, sciatica, and "tennis elbow."

Dosage: The recommended dosage is 1 tablet q.i.d. The usual cautions and contraindications of corticotherapy should be observed.

Supplied: In bottles of 100 and 500.

Formula: Each Medaprin tablet contains

- 300 mg. acetylsalicylic acid, for prompt relief of pain
- 1 mg. Medrol, to suppress the causative inflammation
- 200 mg. calcium carbonate, as buffer

*TRADEMARK **TRADEMARK, REG. U. S. PAT. OFF.—METHYLPREDNISOLONE, UPJOHN
†RATIO OF DESIRED EFFECTS TO UNDESIRED EFFECTS

The Upjohn Company, Kalamazoo, Michigan

Upjohn

2½ minutes of your time reading about Trancopal may change your prescription habits when treating musculoskeletal and psychogenic disorders.

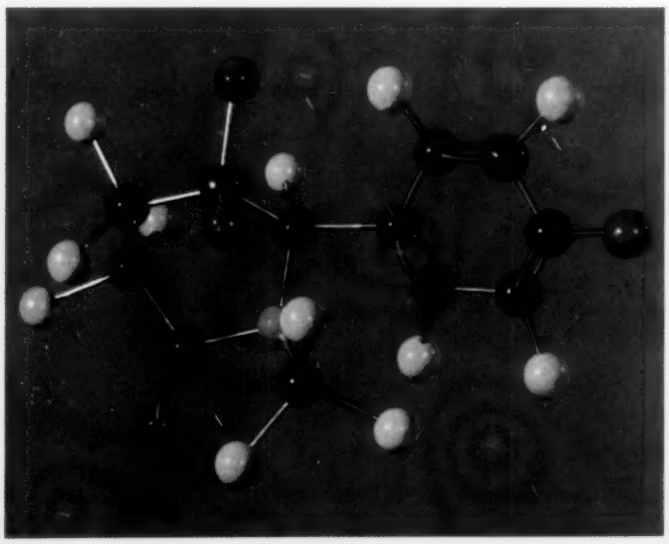
Trancopal®

*the first true tranquilaxant**

***Potent* MUSCLE RELAXANT**

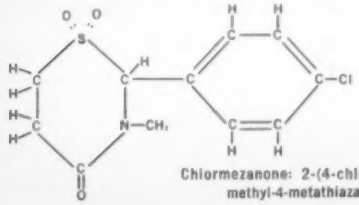
***...Equally effective as a* TRANQUILIZER**

*** tran-qui-lax-ant** (tran'kwi-lak'sant) [< L. tranquillus, quiet; L. laxare, to loosen, as the muscles]



Trancopal, a major development of Winthrop research, is a new orally administered nonhypnotic central relaxant and tranquilizer. It relieves muscle spasm in a variety of musculoskeletal and neurologic conditions and also exerts a marked tranquilizing effect in anxiety and tension states.

Unrelated chemically to any other drug in current use, Trancopal offers a completely new major chemical contribution to therapeutics.



Chlormezanone: 2-(4-chlorophenyl)-3-methyl-4-metathiazanone-1-dioxide

Thoroughly evaluated clinically...

Clinical studies of 4092 patients by 105 physicians[1] have demonstrated that Trancopal often is effective when other drugs have failed. From these studies it is evident that Trancopal can provide more help for a greater number of tense, spastic, and/or emotionally upset patients than can any other chemotherapeutic agent in current use.

In musculoskeletal conditions[1]

effective in **91%** of patients

INDICATIONS

Low back pain (lumbago)
Bursitis
Osteoarthritis
Fibrositis
Myositis
Postoperative myalgias
Neck pain (torticollis)
Rheumatoid arthritis
Disk syndrome
Joint disorders (ankle sprain, tennis elbow, etc.)

By relieving muscle spasm and pain, Trancopal permits early and active purposeful exercise and physical therapy to accomplish maximal benefits for rapid recovery.

Trancopal

Dosage: One Caplet (100 mg.) orally three or four times daily. Relief of symptoms occurs in fifteen to thirty minutes and lasts from four to six hours.

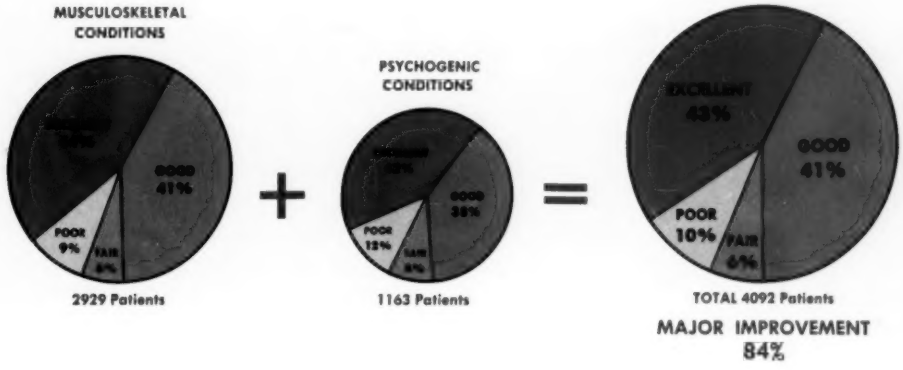
In anxiety and tension states[1]

effective in 88% of patients

INDICATIONS

Anxiety and tension states	Dysmenorrhea
Premenstrual tension	Asthma
Emphysema	Angina pectoris

Because of its exceptional calmative property, Trancopal "...allows the patient to use his energies in a more productive manner in overcoming his basic problem."[2]



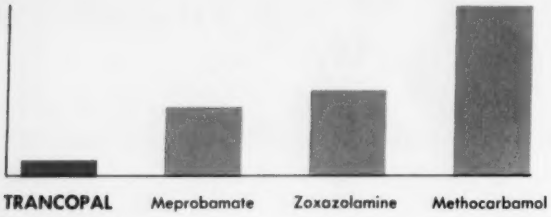
Of the total patients treated, Trancopal produced excellent results in 43 per cent, good results in 41 per cent, fair results in 6 per cent, and poor results in 10 per cent.

Better tolerated and safer than older drugs[3]

With Trancopal there is no clouding of consciousness, no euphoria or depression. Even in high dosage, there is no perceptible soporific effect. Because it does not irritate gastric mucosa, it can be taken without regard to mealtimes. Administration does not hamper work — or play. There are no known contraindications. Blood pressure, pulse rate, respiration and digestive processes are unaffected by therapeutic dosage.
Toxicity is extremely low. And Trancopal has a lower incidence of side effects than has zoxazolamine, methocarbamol or meprobamate.

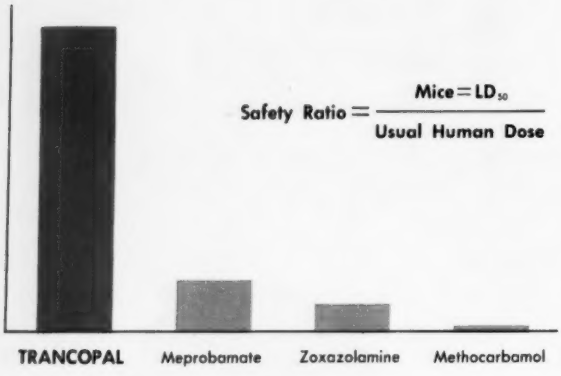
Comparison with 3 widely used central relaxants

When compared with three widely used central relaxants for activity, safety and clinical effectiveness, Trancopal offers definite desirable advantages.



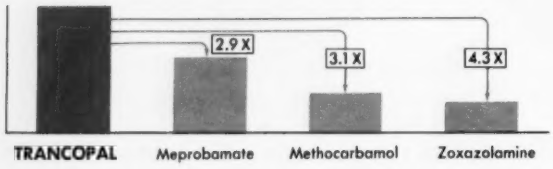
for activity

In the usual human dose, Trancopal is four to ten times as potent per milligram.



for safety

Comparative pharmacologic tests showed that Trancopal is up to thirteen times as safe or up to thirteen times less toxic. The measure of safety was the LD_{50} in mice/usual human dose.



for clinical effectiveness

A clinical comparison in low back pain, torticollis, bursitis and anxiety states showed that Trancopal is up to four times as effective. Each of the 40 patients received all four drugs in random rotation for several days. Although each of the four gave some relief, only the one providing the most effective relief was recorded.

Supplied: Trancopal Caplets® (scored) 100 mg., bottles of 100.

References: 1. Cooperative Study, Department of Medical Research, Winthrop Laboratories. • 2. Gans, S.E.: To be published. • 3. Lichtman, A.L.: Kentucky Acad. Gen. Pract. J. 4:28, Oct., 1958.

the first true tranquilaxant

Trancopal

Potent
MUSCLE RELAXANT
...Equally effective as a
TRANQUILIZER

Winthrop Laboratories / New York 18, New York

Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U. S. Pat. Off.

Printed in U. S. A. 3-59 (4027)

PRODUCTS OF DISTINCTION FROM THE PURDUE FREDERICK COMPANY

Cerumenex®
DROPS

For easy, safe, painless removal of ear wax—without instrumentation

Proved clinically effective in 4,464 (95.0 per cent) of 4,695 patients (ages 3 months to 83 years) with excess or impacted cerumen†

For patient convenience and economy, prescribe 'Cerumenex' Drops in the regular 15 cc. bottle, packaged with cellophane wrapped blunt-end dropper.

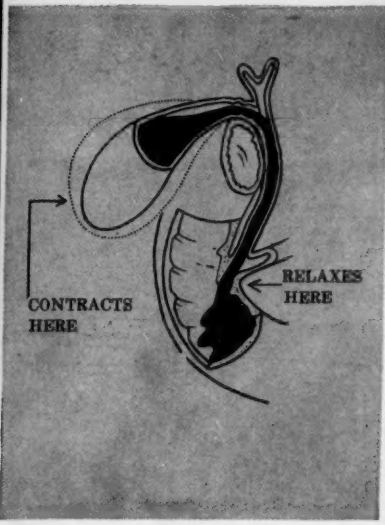
†Complete bibliography available on request

4% T.R. "PEG" CONTAINS CERAPON® 10.0% IN PROPYLENE GLYCOL, LORSBANOL 0.5% ®BRAND OF TRIETHANOLAMINE POLYPEPTIDE OLEATE-CONDENSATE U.S. AND FOREIGN PATENTS PENDING

PROBILAGOL™
LIQUID

cholecystokinetic-cholagogue action

Specifically designed for therapeutic and prophylactic management of dyspepsia and food intolerance



A unique cholecystokinetic-cholagogue, 'ProBilagol' provides prompt gallbladder evacuation, prolonged relief, safety, extreme palatability

Supply: Bottles of 12 and 6 fluid ounces.

†PROBILAGOL D-GLUCITOL WITH HOMATROPINE METHYLBROMIDE, PURDUE FREDERICK

Senokot®
natural bowel corrective
TABLETS / GRANULES

Assures bowel correction and rehabilitation because it "...acts in a way almost indistinguishable from the normal physiologic mechanism..."[1]

without mucosal irritation due to chemical contact

without incompatibilities to antacids and other medications

Supply: Tablets, small and easy to swallow, in bottles of 100. Granules, cocoa-flavored, in 8 and 4 ounce canisters.

1. Herland, A. L., Lowenstein, A.: Quart. Rev. Surg. Obst. & Gynec. 14:196 (Dec.) 1957

®SENOKOT STANDARDIZED CONCENTRATE OF TOTAL ACTIVE PRINCIPLES OF CASSIA ACUTIFOLIA POD. PURDUE FREDERICK

The Purdue Frederick Company

DEDICATED TO PHYSICIAN AND PATIENT SINCE 1892

NEW YORK 14, N.Y. | TORONTO 1, ONTARIO

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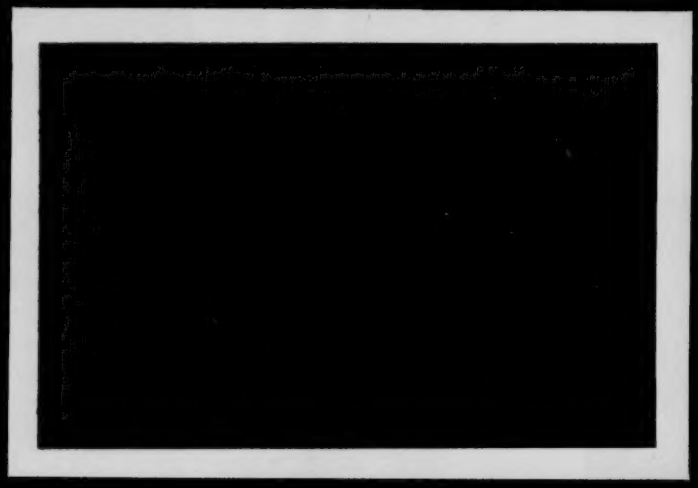


in Rheumatoid Arthritis

[1] Using combined drug therapy with
or Aralen® as maintenance therapy.
With Plaquenil or Aralen alone 62% grade I and II improvement. (Scherbel, A.L., Harrison, J.W., and Atdjian, Martin: Cleveland Clin. Quart. 25:95, April, 1958. Report on 805 patients with rheumatoid arthritis or related diseases.)

Reasons for Failure:

1. Treatment discontinued too soon (percentage of patients improved increases substantially after first six months).
2. Patients in relapse after prolonged steroid therapy are resistant to Plaquenil or Aralen treatment for several months.

Plaquenil sulfate is supplied in tablets of 200 mg., bottles of 100.

Dose: Initial — 400 to 600 mg. (2 or 3 tablets) daily.
Maintenance — 200 to 400 mg. (1 or 2 tablets) daily.

Write for Booklet.

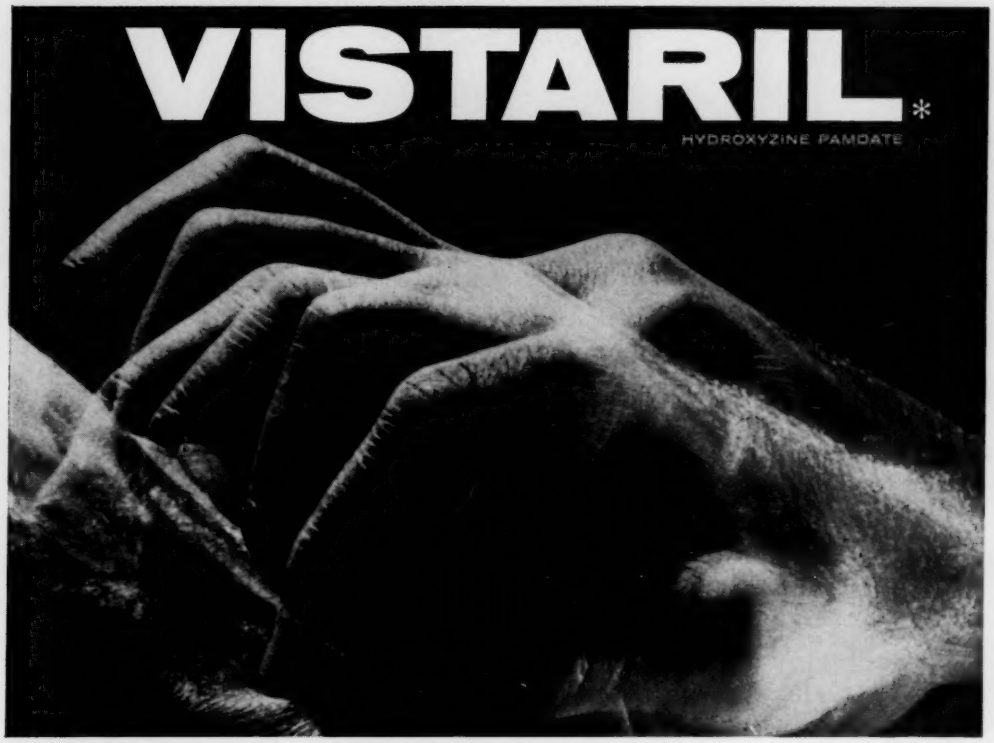
Aralen, brand of chloroquine; and Plaquenil, brand of hydroxychloroquine; trademarks reg. U.S. Pat. Off.

Winthrop LABORATORIES
New York 18, N. Y.

IN URTICARIA AND PRURITUS

VISTARIL*

HYDROXYZINE PAMOATE



A PSYCHOTHERAPEUTIC ANTIHISTAMINE

(as designated by A.M.A. Council on Drugs, 1958)

SPECIFIC ANTIHISTAMINIC ACTION in the treatment of a variety of skin disorders commonly seen in your practice.

"While some of the tranquilizers are only partially effective as far as antiallergic activities are concerned . . . [hydroxyzine] has been found, by comparison, to be the most potent thus far . . ."[1]

"The most striking results were seen in those patients with chronic urticaria of undetermined etiology."[2]

PLUS

PSYCHOTHERAPEUTIC POTENCY for the relief of anxiety and tension.

The psychotherapeutic effectiveness of hydroxyzine (VISTARIL) was confirmed in a series of 479 patients suffering from a wide variety of dermatoses, including atopic dermatitis, neurodermatitis, psoriasis, lichen planus, nummular eczema, dyshidrosis, pruritus ani and vulvae, and rosacea. "Adverse reactions were minimal."[3]

RECOMMENDED ORAL DOSAGE: *50 mg. q.i.d. initially; adjust according to individual response.*

VISTARIL Capsules: *25 mg., 50 mg., 100 mg.*

VISTARIL Parenteral Solution: *10 cc. vials and 2 cc. Steraject® Cartridges. Each cc. contains 25 mg. hydroxyzine (as the HCl).*

More than a tranquilizer

REFERENCES:

1. Eisenberg, B. C.: Clinical Medicine *5*:897-904 (July) 1958.
2. Feinberg, A. R., et al.: J. Allergy *29*:358 (July) 1958.
3. Robinson, H. M., et al.: So. Med. J. *50*:1282 (Oct.) 1957.

Pfizer *Science for the world's well-being*

PFIZER LABORATORIES *Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.*

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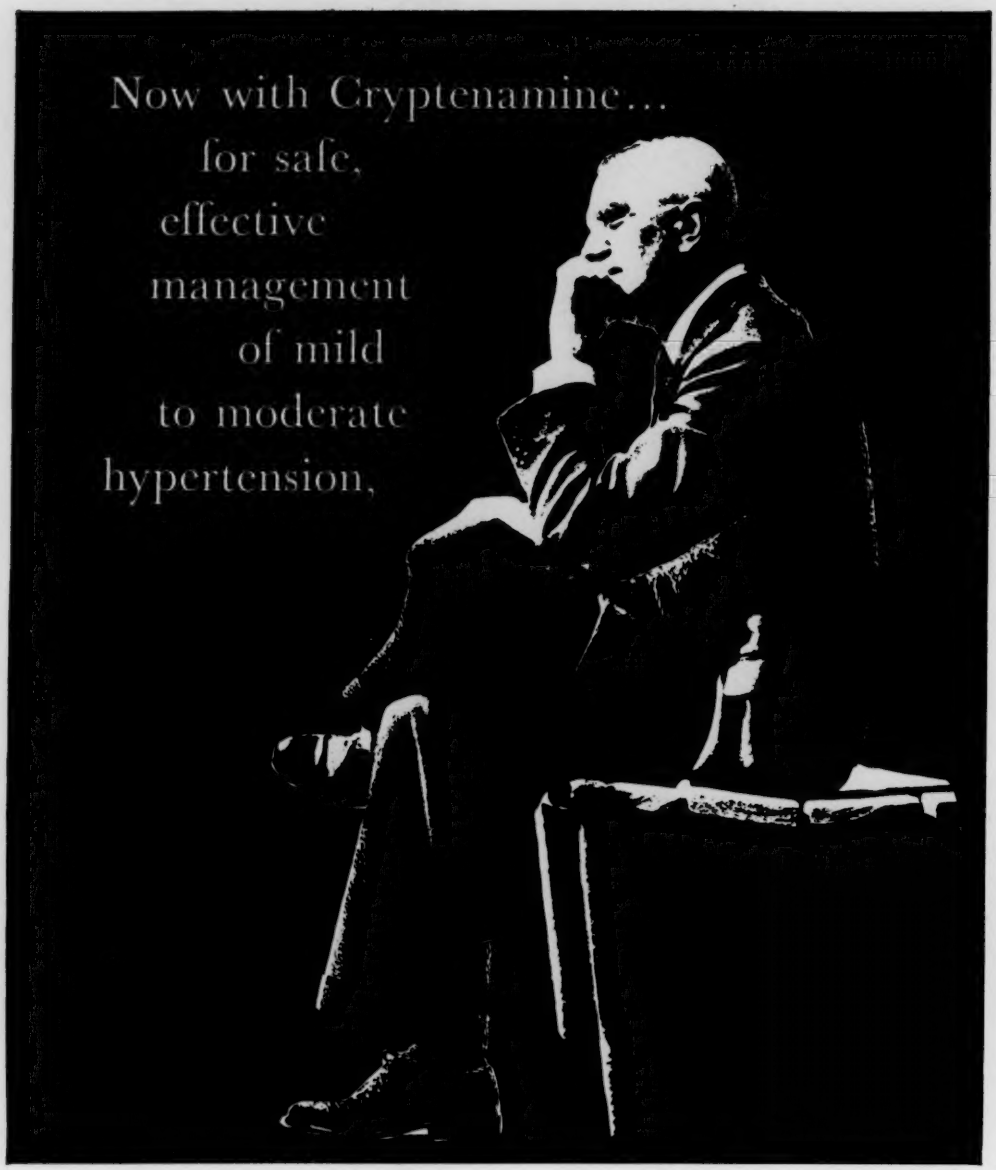


℞ Veratrite®

Prescribed with confidence 8,863,769 times Veratrite continues to be the antihypertensive of choice for treating geriatric patients.

Veratrite effectively reduces blood pressure through action on the sympathetic nervous system, without detriment to the cardiac output.

Each VERATRITE tabule contains:

Cryptenamine (tannates) 40 C.S.R.* Units	
Sodium nitrite	1 gr.
Phenobarbital	¼ gr.

*Carotid Sinus Reflex

IRWIN, NEISLER & CO. • DECATUR, ILLINOIS

Neisler

to prevent the sequelae of u.r.i. ... and relieve the symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Pneumonitis, otitis, tonsillitis, adenitis, sinusitis or bronchitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient...ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

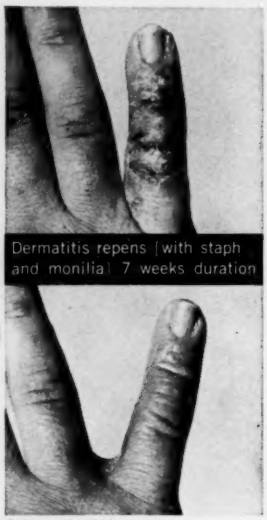
Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

new for total management of itching,[1,2] inflamed,[3,4] infected[5,6] skin lesions

Mycolog ointment

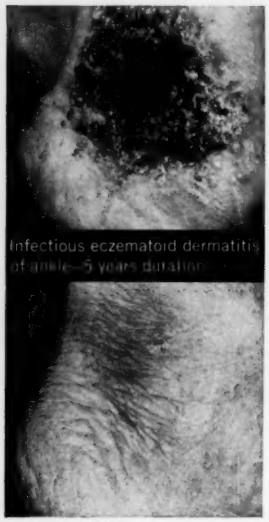
Kenalog, Spectrocin and Mycostatin in Plastibase

antipruritic/anti-inflammatory/antibacterial/antifungal



Dermatitis repens [with staph and monilia] 7 weeks duration

Cleared in 5 days



Infectious eczematoid dermatitis of ankle—5 years duration

Cleared in 20 days

Mycolog Ointment—containing the new superior topical corticoid Kenalog—reduces inflammation,[3,4] relieves itching,[1,2] and combats or prevents bacterial, monilial and mixed infections.[5-7] It is extremely well tolerated, and assures a rapid, decisive clinical response for most infected dermatoses.

> "Thirty-one of 38 patients . . . obtained excellent or good control of dermatological lesions . . . [Mycolog] was highly effective, particularly in the management of mixed infections. Several recalcitrant eruptions which had not responded to previous therapy were remarkably responsive to the daily application of this preparation over periods of 2 to 3 weeks."[8]

For total management of itching, inflamed, infected skin lesions, Mycolog contains triamcinolone acetonide, an outstanding new topical corticoid for prompt, effective relief of itching, burning and inflammation[1-4]—neomycin and gramicidin for powerful antibacterial action[7]—and nystatin for treating or preventing Candida (Monilia) albicans infections.[8,9]

Application: Apply 2 to 3 times daily. Supply: 5 Gm. and 15 Gm. tubes. Each gram supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base, 0.25 mg. gramicidin, and 100,000 units nystatin in PLASTIBASE.

References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

And whatever the topical corticoid need, a suitable Squibb formulation is available—Kenalog-S Lotion—7½ cc. plastic squeeze bottles. Each cc. supplies 1.0 mg. (0.1%) triamcinolone acetonide, 2.5 mg. neomycin base and 0.25 mg. gramicidin. Kenalog Cream, 0.1%—5 Gm. and 15 Gm. tubes. Kenalog Lotion, 0.1%—15 cc. plastic squeeze bottles. Kenalog Ointment, 0.1%—5 Gm. and 15 Gm. tubes.

SQUIBB

Squibb Quality — the Priceless Ingredient

"SPECTROCIN"®, "MYCOSTATIN"®, "PLASTIBASE"®, "MYCOLOG" AND "KENALOG" ARE SQUIBB TRADEMARKS

Four weeks ago, Mrs. C. was an anxiety patient, complaining of weakness, trembling, sweating, tachycardia, on the slightest exertion. Her symptoms followed family reverses; home life became disorganized, she couldn't cope with housework. Therapy with TRILAFON, 4 mg. t.i.d., and a weekly office visit to discuss her feelings have worked wonders in reactivating this patient. She's on maintenance dosage now, 2 mg. t.i.d., able to work very well, and wide-awake and active all day long.

mobilizes patients immobilized by anxiety

Trilafon®
perphenazine

when you want to avoid drowsiness

- helps the patient contain anxiety, tension
- restores normal working capacity

TRILAFON Tablets—2 mg. and 4 mg.; bottles of 50 and 500.
TRILAFON REPETABS,® 8 mg.—4 mg. for *prompt* effect in the outer layer and 4 mg. for *prolonged relief* in the timed-action inner core; bottles of 30 and 100.
For complete details on TRILAFON consult Schering literature.

Schering

SCHERING CORPORATION • BLOOMFIELD, NEW JERSEY

V-CILLIN K®...

dependable, fast, effective therapy

V-Cillin K produces therapeutic blood levels in all patients within five to fifteen minutes after administration—levels higher than those attained with any other oral penicillin. Infections resolve rapidly. *Dosage:* 125 or 250 mg. three times daily. *Supplied:* In scored tablets of 125 and 250 mg. (200,000 and 400,000 units).

New: V-Cillin K® Sulfa. Each tablet combines 125 mg. of V-Cillin K with 0.5 Gm. of the three preferred sulfonamides.

New: V-Cillin K, Pediatric, a taste treat for young patients. In bottles of 40 and 80 cc. Each 5-cc. teaspoonful provides 125 mg. of V-Cillin K.

V-Cillin K® (penicillin V potassium, Lilly)
V-Cillin K® Sulfa (penicillin V potassium with triple sulfas, Lilly)

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

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NORTH CAROLINA MEDICAL JOURNAL

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VOLUME 20 APRIL, 1959 No. 4

Treatment of Iron Deficiency Anemia Emphasizing a Simple Technique For Positive Diagnosis

THOMAS H. McMILLAN, JR., M.D.

and

JAMES M. TART, M.D.

CHARLOTTE

The following study was undertaken in an effort to determine the relative effectiveness of several methods of treating iron deficiency anemia. Cases were carefully selected to exclude other causes of anemia. Thyroid, renal, and hemolytic diseases were specifically excluded by appropriate tests, when necssary.

Diagnosis

The diagnosis of iron deficiency anemia did not rest upon exclusion of other causes, since in the majority of cases all the following findings were recorded: (1) a definite degree of anemia, with hemoglobin usually less than 9.0 Gm. and red blood cells appearing hypochromic on smear; (2) low serum iron, unless iron-containing preparations had been given; and (3) absence of stainable iron on smears or sections of the bone marrow.

Of the preceding diagnostic aids examination of the bone marrow is the most reliable, and can be done anywhere with simple equipment. While not necessary in every case, it is extremely helpful when the medical history, physical examination, and routine laboratory data leave some doubt about the diagnosis. Although it is true that iron deficiency usually results in a hypochromic anemia, it is now recognized that other conditions, unrelated to iron deficiency, may produce a hypochromic anemia[1]. We are currently studying an unusual case of marked hypochromic anemia in the presence of idiopathic hemochromatosis, which is improving after removal of more than 25,000 cc. of blood in the past year. Similar cases have been reported by Gelpi and Ende[2]. The careless administration of iron in such conditions would undoubtedly be detrimental. Thalassemia is a classic example of hypochromic anemia unrelated to iron deficiency, although rather unlikely to be confused with it.

On the other hand, our observations have confirmed those of others[3] that in patients with hypoplastic and hemolytic types of anemia, stored iron is always to be found in the marrow unless an unrelated state of iron deficiency exists. For example, the majority of patients with rheumatoid arthritis associated with anemia have abundant stores of iron and are unresponsive to iron therapy. In Case 4 of this series, however, an iron deficiency was demonstrated, and the patient made a good response to treatment.

Technique

For examination 1 or 2 cc. of marrow is aspirated quickly through an ordinary marrow needle into a 10-cc. syringe which has been wet with a solution of 1 mg. of heparin sodium per 1 cc. of isotonic saline. The sternum, opposite the second interspace, may be punctured under local anesthesia with but little discomfort and no risk, but in apprehensive patients the posterior ilium, just lateral to the posterior superior iliac spine, may be used. The specimen is rotated in the syringe to mix it with the heparin and then ejected onto a watch glass or slide. Suitable marrow particles are

Fig. 1. Appearance of iron granules in the bone marrow when stained by the method described.

then picked out with a fine pipette and smeared on cover slips or slides.

We have not been able to master the technique of evaluating iron stores in unstained smears[3], but a simple staining technique, modified from that described by Sundberg and Broman[4], has proved quite satisfactory. The smears are fixed for 10 minutes with methyl alcohol, dried and stained for 30 minutes with a mixture containing equal parts of 0.1 normal hydrochloric acid and 5 per cent potassium ferrocyanide. These separate solutions are stable, but must be combined immediately before being poured onto the slide. Eosin, Biebrich scarlet, or safranine are suitable counterstains. Under the oil immersion lens the iron granules are seen as Prussian blue.

The serum iron determinations were done by the bathophenanthroline method[5], and in our experience most normal values fall into the range of 75 to 150 mcg. per 100 cc.

Case Reports

Case 1

A 33 year old woman (gravida 4) had her last menstrual period in February, 1957. She was seen on August 26 because of hydramnios. Anemia had been recognized and treated during the last two pregnancies. The hemoglobin was 8.6 Gm., the hematocrit 32, red blood cell count 4,150,000, with 1.6 per cent reticulocytes. The serum iron was 62 mcg., and the bone marrow showed no stored iron. Other abnormal findings were gastric achlorhydria and a "prediabetic" type glucose tolerance curve.

The patient was given 1 cc. of Imferon* on August 31 and 4 cc. daily from September 1 through September 7, totaling 29 cc. On September 3 the reticulocyte count was 8.0 per cent, and on September 9 the hemoglobin was 10.5 Gm.

On September 18 she delivered a stillborn, hydrocephalic infant. Two days later her hemoglobin was 11.6 Gm., hematocrit 42, and red cell count 4,400,000.

Case 2

A 54 year old woman was admitted August 29, 1957, complaining of weakness and fatigue. She had undergone bilateral oophorectomy 20 years previously because of vaginal bleeding and "tumors of the ovaries." Menstruation, in association with hormone injections, continued 3 years longer. Ten years before the current admission a subtotal gastrectomy had been done because of hemorrhage from a duodenal ulcer. No bleeding was documented thereafter.

On August 30 the hemoglobin was 8.5 Gm., hematocrit 35, red blood cell count 3,250,000, with 2.0 per cent reticulocytes. The serum iron was 62 mcg. The bone marrow showed erythroid hyperplasia and no stored iron. Gastric analysis showed no free hydrochloric acid. Stools were negative for occult blood. Hypothyroidism was suspected clinically, but excluded by normal radioactive iodine uptake and protein-bound iodine determinations.

On September 4 the patient was given 1 cc. of Imferon, and from September 5 to September 9 she was given 2 cc. twice daily. The total dosage was 19 cc., the drug being discontinued between doses on the final day because of marked local inflammatory reaction with systemic symptoms and fever. No break in the technique of injection could be implicated in the adverse reaction, and it was felt that the patient was intolerant of the drug itself, at least in the amount used. On September 22 she was started on Proferrin**, with 1 cc., 3 cc., 6 cc., and 10 cc. being given on successive days for a total of 20 cc. The hemoglobin, red blood cell count, and reticulocyte count showed no significant change during her hospital stay, and she was discharged unimproved on September 25. Surprisingly, on November 18 the hemoglobin was found to be 12.0 Gm., the hematocrit 39, and the

*Iron-dextran for intramuscular injection, supplied for this study by Lakeside Laboratories, Inc., Milwaukee, Wisconsin. Each cubic centimeter contains 50 mgm. of elemental iron.

**An intravenous preparation (Merck, Sharp & Dohme) containing 20 mg. of elemental iron per cubic centimeter.

red cell count 4,480,000. During the next six months the blood values remained at this level without further treatment. Unfortunately, complicating factors made it impossible to determine if she received symptomatic benefit.

Case 3

A 33 year old woman (gravida 6) was admitted September 6, 1957, because of anemia. She had received transfusions at her third and fourth deliveries and had had a borderline hemoglobin value with the fifth. Her last menstrual period was February 15. On August 23 she had been started on OBron*, 2 capsules given daily, because of a hemoglobin of 8.0 Gm. On August 29 the hemoglobin was 6.5 Gm. and her medication was changed to Mol-Iron**, 6 tablets daily.

On admission the hemoglobin was 7.5 Gm., hematocrit 29, red blood cell count 3,580,000, with 8.2 per cent reticulocytes. Free hydrochloric acid was found in the stomach. The serum iron was 131 mcg., but the bone marrow showed no stored iron. On September 5 the patient was started on Feosol*** 1 tablet given twice daily. On September 26 the hemoglobin was 10.6 Gm., hematocrit 36, red blood cell count 3,950,000, with 1.6 per cent reticulocytes. Borderline toxemia was noted. When she was re-admitted on November 21, the hemoglobin was 10.2 Gm., hematocrit 35, red blood cell count 3,800,000. She was delivered uneventfully on November 23.

Case 4

A 42 year old woman was admitted September 24, 1957, for study and treatment of anemia. She had had mild rheumatoid arthritis for 10 years. A subtotal gastrectomy had been done in 1950 because of gastric and duodenal ulcers.

The hemoglobin was 6.6 Gm., hematocrit 26, red blood cell count 3,320,000, 1.4 per cent reticulocytes. The blood smear showed markedly hypochromic red cells. Gastric analysis showed achlorhydria. The serum iron was 37 mcg., and the bone marrow showed no stored iron. She was given 2 cc. of Imferon on September 28 and 5 cc. daily from September 29 through October 2, for a total dosage of 22 cc.

On October 11 the hemoglobin was 8.8 Gm., the red cell count 4,400,000, with 2.3 per cent reticulocytes. On November 13 the hemoglobin was 11.0 Gm., the hematocrit 41, the red blood cell count 4,500,000. On January 10, 1958, the hemoglobin reached 12.6 Gm., the hematocrit 42.

Case 5

This 38 year old woman (gravida 7) had been eating a fairly good diet, but gave a history of profuse menstrual flow between her many pregnancies. Her last menstrual period had been on April 28, 1957. On October 18 the hemoglobin was 6.5 Gm., the hematocrit 29, the red blood cell count 3,550,000, 1.6 per cent reticulocytes. The serum iron was 36 mcg., and the bone marrow showed no stored iron.

She was started on Feosol Spansules*, 1 daily, on October 31. On December 19 the hemoglobin was 10.0 Gm. On January 12, 1958, she was delivered of a healthy male infant weighing 7 lb. ½ ounce. On January 15 the hemoglobin was 9.4 Gm., the red blood cell count 3,850,000. It has not been possible to follow this patient further.

Case 6

A 23 year old woman (gravida 5) had her last menstrual period July 15, 1957. Her diet was good and there was no history of excessive menstrual blood loss. On November 8 the hemoglobin was 8.0 Gm., and the red blood cell count 3,390,000 On January 3, 1958, the hemoglobin was 9.0 Gm., the hematocrit 32, red blood cell count 4,400,000, with 2.5 per cent reticulocytes. On January 16 she was started on Feosol, and took 2 tablets daily until February 27, when Mol-Iron was substituted by a physician who was unaware of this study. At that time her hemoglobin was 11.2 Gm., hematocrit 36, red blood cell count 4,000.-000. She was delivered uneventfully on April 9. On April 12 the hemoglobin was 13.5 Gm., the hematocrit 46, the red blood cell count 4,750,000.

Case 7

A 52 year old man, whose mentality was subnormal, underwent gastroenterostomy and vagotomy for gastric ulcers in January, 1957. His hemoglobin three weeks postoperatively was 10.2 Gm.

On December 4, 1957, he showed evidence of mild congestive heart failure and his hemoglobin was found to be 6.5 Gm. When he was readmitted to the hospital on December 18 the hemoglobin was 5.0 Gm. No evidence of gross bleeding was noted at any time, but the stool was intermittently positive for occult blood. The serum iron was 27 mcg. and the bone marrow showed erythroid hyperplasia, with no stored iron. Tubeless gastric analysis gave presumptive evidence of achlorhydria, but the patient would not tolerate passage of a tube. Sigmoidoscopy, barium enema, and two radiologic examinations of the upper gastrointestinal tract failed to demonstrate any source of bleeding. Between December 20, 1957, and January 8, 1958, the patient received 42 cc. of Imferon. On December 24 the hemoglobin had fallen to 4.5 Gm., probably because of additional blood loss, but

*A prenatal supplement (Roerig) containing 195 mgm. ferrous sulfate per capsule.

**Made by White Laboratories, Inc.: each tablet contains 195 mgm. ferrous sulfate.

***Supplied for this study by Smith, Kline, and French Laboratories, Philadelphia. Each tablet contains 195 mgm. ferrous sulfate or about 60 mgm. elemental iron.

*Also supplied for this study by Smith, Kline, & French. Each capsule contains about 50 mgm. elemental iron as ferrous sulfate in sustained release form.

on December 27 the reticulocyte count was 18.6 per cent. Stool examinations thereafter were negative for occult blood, and he was discharged from the hospital on January 8 with a hemoglobin of 9.5 Gm. Additional 5 cc. doses of Imferon were given on January 15, 22, and 29, and on February 19 and April 4. On January 15 the hemoglobin was 10.0 Gm., on February 19 it was 13.0 Gm., and on May 14 it was 14.5 Gm.

Case 8

The patient, a 15 year old girl, was of low mentality and came from a situation of dire poverty. Her diet had been poor, but there was no history of excessive menstrual flow or other abnormal blood loss. When she was admitted to the hospital on December 17, 1957, her hemoglobin was 6.6 Gm. The bone marrow showed no stored iron. On December 19 she was given 2 cc. of Imferon, and 5 cc. doses were given daily for the next three days. Unfortunately, all the injections were given into the same gluteal region, and marked local inflammation with systemic symptoms and fever resulted. However, on December 30 the hemoglobin had risen to 7.8 Gm. On February 7, 1958, the hemoglobin was 10.0 Gm., and she was given another 2 cc. of Imferon without adverse reaction. A 5 cc. dose was given uneventfully on March 31, at which time the hemoglobin was 10.4 Gm. No further treatment was given, but on May 28 the hemoglobin was 12.0 Gm.

Case 9

A 35 year old woman was seen during her ninth pregnancy, the last menstrual period having occurred August 30, 1957. On January 3, 1958, the hemoglobin was 8.4 Gm., the red blood cell count 3,640,000. The serum iron was 41 mcg., and the bone marrow showed no stored iron. On January 16 she was started on Feosol, 1 tablet twice daily. On February 13 the hemoglobin was 10.8 Gm. Feosol was continued for about two more weeks, after which it was abandoned by the patient because of gastrointestinal disturbances. No further treatment was given, but on March 6 the hemoglobin was 12.0 Gm. On April 11 it was 12.5 Gm., and on May 29 it was 13.9 Gm. She delivered uneventfully on June 4, and on June 7 her hemoglobin was 14.0 Gm., hematocrit 48.

Case 10

The patient, a 22 year old woman, was mentally deficient. She had a history of pulmonary tuberculosis, and had been eating a poor diet, lacking in lean meat. She had had 1 previous pregnancy and her last menstrual period was May 4, 1957. When she was seen on January 23, 1958, the hemoglobin was 7.6 Gm., the hematocrit 30, the red blood cell count 4,000,000 and the reticulocyte count 6.2 per cent. The serum iron was 44 mcg., and the bone marrow showed no stored iron.

On January 30 the patient was given 2 cc. of Imferon and thereafter 5 cc. twice weekly for four doses. On February 13 the hemoglobin was 10.0 Gm., on February 20 it was 11.0 Gm., and on March 6 it was 10.8 Gm. with a hematocrit of 40. She was delivered uneventfully on March 8, and three days later the hemoglobin was 12.0 Gm., the hematocrit 44.

Case 11

This 17 year old girl was found to have pseudohemophilia (von Willebrand's disease). She had suffered severe nosebleeds in childhood and often required transfusions. At adolescense the nosebleeds became less frequent and less severe, but menstrual flow was almost always excessive. On January 30, 1958, the hemoglobin was 7.8 Gm., hematocrit 28, red cell count 3,150,000 with 20 per cent reticulocytes. The serum iron was 42 mcg., and the bone marrow showed no stored iron.

On February 2 she was given 2 cc. of Imferon, followed by 5 cc. doses on February 3 and 4. On February 18 the hemoglobin was 9.4 Gm., hematocrit 34. She was given another 5 cc. of Imferon. On March 11 the hemoglobin was 8.8 Gm., and another 5 cc. of Imferon was given. On April 1 a final dose of 5 cc. was given, making a total of 27 cc. At that time the hemoglobin was 10.8 Gm., the hematocrit 38.

Case 12

This 37 year old woman had had nine previous pregnancies, and her last menstrual period was August 14, 1957. On February 27, 1958, the hemoglobin was 6.2 Gm., hematocrit 24, red blood count 3,380,000, with 5.4 per cent reticulocytes. The serum iron was 33 mcg. On March 10 she was started on Feosol Spansules, 1 daily. On April 11 the hemoglobin was 6.2 Gm., hematocrit 25, red cell count 3,840,000. On April 17 a bone marrow aspiration was done and no stored iron was found. She was given 2 cc. of Imferon on that date and 5 cc. doses on April 18 and 21. On April 24 she stated that she felt much improved, although her hemoglobin was only 6.0 Gm. The reticulocyte count, however, was 15.4 per cent. The patient was given 3 cc. of Imferon on that date and 5 cc. on April 28. On May 1 the hemoglobin was 8.2 Gm., the hematocrit 32, the red cell count 4,090,000. Another 5 cc. of Imferon was given. On May 8 the hemoglobin was 9.5 Gm., the hematocrit 34. A final 5 cc. of Imferon was given, making a total of 25 cc. On May 29 the hemoglobin was 10.5 Gm., the hematocrit 38. She was admitted in labor on May 31, but signs of fetal distress appeared before delivery and the infant died shortly after birth. The placenta showed areas of fibrosis. On June 3 the hemoglobin was 11.0 Gm., the hematocrit 40.

Case 13

This 14 year old girl had had menorrhagia since

the menarche at age 12, but no defect in the hemostatic mechanism could be demonstrated. When she was admitted March 11, 1958, the hemoglobin was 9.0 Gm., red cell count 4,200,000, reticulocytes 1.4 per cent. The red cells appeared hypochromic on smear. Serum iron and bone marrow study were not considered essential and were deferred to save expense.

She received 2 cc. of Imferon on March 13 and 5 cc. on March 14 and March 17, respectively. On the last date the reticulocyte count was 3.2 per cent. The patient was given additional 5 cc. doses of Imferon on March 25, April 8, and April 22, at which times the hemoglobin values were 9.6 Gm., 11.6 Gm., and 11.8 Gm., respectively. No further treatment was given, but the hemoglobin continued to rise, reaching 14.4 Gm. on July 1.

Comment

A cause for iron deficiency anemia can usually be discovered in the clinical history. Virtually all our patients had a history of poor diet, abnormal blood loss, or gastrointestinal surgery. Although individuals undoubtedly show great variability in their capacity to absorb dietary iron, few on a normal diet become frankly deficient unless unusual loss, such as that from multiparity, has occurred. It appears, however, that the small loss from normal menstruation may be sufficient to cause a negative iron balance if the diet is very poor, as in case 8, or when the gastrointestinal tract is not intact, as in case 4.

Approximately 250 mg. of elemental iron is needed to produce the hemoglobin in 500 cc. of blood, and this amount will raise the hemoglobin of an adult approximately 1.5 Gm. The problems of iron absorption have been carefully reviewed by Josephs[6]. It is generally believed that an iron deficient individual may absorb 5 to 15 per cent of an oral dose that does not exceed 100 mg. of iron. With larger doses the percentage of absorption is lower. Both physiologic differences and inhibitory factors in the diet influence the amount of medicinal iron absorbed. The extent of these influences is shown by the sharp contrast of case 9, which responded dramatically to oral iron, and case 12, which showed no response until injectable iron was given. Patient 4, who had had a subtotal gastrectomy, had also been treated unsuccessfully with oral iron before this study was initiated.

Although oral iron preparations remain the basic therapeutic agent in iron deficiency anemia, a real place has been found for injectable iron. We have encountered no really serious reactions to the iron-dextran preparation used; and in cases where a somewhat faster response may avert the necessity for transfusion (and the risk of hepatitis), where the integrity of the gastrointestinal tract has been disturbed, where the patient cannot or will not follow a program of oral iron treatment for a sufficient period of time, or where continued bleeding is expected, the use of an injectable preparation is justified. It should be emphasized that the physician should not use any iron preparation to temporize with a blood loss anemia without making every effort to find and correct the cause.

Summary and Conclusions

1. Iron deficiency anemia usually has a definite cause which can be found in the clinical history.

2. If the history, physical examination, and routine laboratory data leave doubt about the iron deficiency state, examination of the bone marrow will afford a definitive answer.

3. Oral iron preparations, such as ferrous sulfate, provide adequate treatment for many cases of iron deficiency anemia. In selected cases an injectable preparation is indicated.

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Culture As a Factor in Obsessive-Compulsive Neurosis

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Culture in this paper refers to the cultural expectations of any social group to which the individual may belong and to the interpersonal situations in which the individual is constantly engaged in meeting another's expectations on the one hand, and in maintaining his self-esteem and his ego ideals on the other. What seems most characteristic of man is his constant concern about his self-picture and his incessant attempt to live up to his ego ideals. It is because of these typically human characteristics that repressions of, and defenses against, certain unacceptable impulses at times become imperative, resulting often in neurotic symptoms. An attempt will be made to apply this point of view to the review and discussion of a case of an acute obsessive-compulsive neurosis, seen at the out-patient clinic of the Duke Medical Center. The treatment so far consists of 36 psychotherapeutic interviews, extending from February to December, 1957.

Report of a Case

The patient was a 33 year old white married woman who was dressed neatly and appeared to be moderately attractive and well educated. She was the wife of a skilled technician and the mother of two children.

She was the second of 11 children. Her father was a neat and meticulous carpenter, while her mother was reported to be warm and loving but a rather careless housekeeper.

Initial complaints

The patient began the initial interview by complaining about such general symptoms as frequent crying spells, insomnia, and deteriorating marital conditions precipitated by what she termed her "nervous condition." She added that she had been seeing a psychiatrist in another city for half an hour each week over a period of three months. She had been given Miltown and advised to have electric shock treatments. She wanted to know if the same procedure would be followed here. She was advised first to try more intensive psychotherapy than she had had before; drugs and physical treatments would be considered whenever necessary. With some encouragement she then went into what was most pressing in her mind. Bursting into tears, she said that she had just had an argument with her husband about the trailer in which they were living. Her wish to clean it thoroughly seemed to annoy her husband. When asked for more details, she replied that the day they arrived from their former residence her husband had arranged to have a footpath built from the trailer to the nearest road. When one of the colored workers scratched his buttocks while laying the bricks, she felt a wave of utter disgust. Then she saw this laborer touch the walls of the trailer and its doorknob, and she felt a quivering sensation in the pit of her stomach. Immediately after the man finished his job, she got a pail of water and some soap and proceeded to clean, brush, and disinfect the bricks, the walls, the doorknob, and the ground nearby. Greatly annoyed, her husband accused her of indulging in foolish habits. She replied heatedly that he did not understand her, and the argument was on.

Similar instances resulting in strained relations between her and her family were recounted in subsequent interviews. What seemed most exasperating to her husband was the fact that she often required him and the children to undergo the same compulsive washing that she did when she felt they were contaminated. Thus one day she saw a little boy in the street pick his nose and wipe his hand on the wall of the building. As her dress brushed against the same wall, she felt something had contaminated everything on her, including her handbag and her hair. When she arrived home, she felt an overwhelming need to wash everything thoroughly and did not feel comfort-

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able until she had done so. In the meantime, the cooking was delayed, the children were fussing, and her husband was left hungry.

Earlier obsessive-compulsive symptoms

Although in the begining the patient did not seem to have any idea as to what caused the extreme anxiety that necessitated so much compulsive washing, in the course of time and after a great deal of hesitation she eventually was able to recall a trumatic experience during her early adolescence that seemed to set the obsessive-compulsive reaction pattern and to point to the impulses it was originally used to cope with.

"When I was 10 years old," the patient finally related with intermittent sobbing, "a tramp came to our house and was allowed to sleep on the couch in our living room. We were very curious about him, but nothing happened until the next day. While I was going down the stairs, this man got up from the sofa, undressed and exposed himself!" At this point in her story the patient was almost incoherent with tears, but she continued: "I ran to my mother, very much scared, but I could not find her. I looked at the man again and he was pointing his penis at me. I ran into my room and cried and cried. Later on my mother heard all about it and was very angry with my father who allowed the man to stay overnight."

Not long after this incident the patient developed a strong secret interest in the handsome young man living next door and found herself compulsively drawn to the neighbor's porch and looking for a baby, believing a baby could be fathered by a man's touch. Soon after this, her menarche commenced, and apparently she was helped by some adequate information she received about the menses.

Soon the patient's increasing interest in sex and in men took the form of a strong attraction for her good-looking male school teacher. One day she was horrified by seeing this teacher, in her mind's eye, undressing and exposing himself to her as the tramp did two years previously. She immediately proceeded to erase this image by closing her eyes. But soon she was distressed to find that closing her eyes was not sufficient; she had to replace the teacher by the image of her father, an image which in her own words, was "noble and clean." But soon even thinking of her father did not help, for in her mind's eye even her father began to expose himself as the tramp had. As a final resort, she replaced the image of her father with that of Jesus Christ on the crucifix, which she called the "Central Figure." Even this defense soon became ineffective, for in her mind's eye she began to see the "Central Figure" expose himself. By this time she was frantic with fear. Eventually she hit upon the image of the Devil himself, and somehow by mentally thinking of the Devil and touching its image she was able to get away from the disturbing vision of the "Central Figure." But this time the patient found it impossible to continue in school and an attempt was made to get her to talk to a psychiatrist, without success. What seemed to have helped was a five-year stay in the home of one of her paternal aunts, who regulated her life strictly and supervised her associations very closely. At the age of 17 she was considered sufficiently improved to return to her parents.

By the time the patient was 22 she was considered well enough by her parents to be allowed to go to a metropolitan city to find work and live an independent life. She stayed in this city for seven years before meeting and marrying her husband. During this period she learned from her roommate how to masturbate, how to date, and how to get along with men in general. She was once engaged to a fireman, who later died. During these seven years, she occasionally experienced the compulsive urge to wash things, but not to the extent of being uncomfortable.

Onset and development of present illness

The patient dated the onset of her present acute symptoms to her first pregnancy. This was about three months after she got married. Before their marriage she had extracted a promise from her husband not to cause her pregnancy for at least two years. When she found she was pregnant in February, 1954, she went into a state of depression, being afraid that her baby might get sick like her. Her compulsive washing was resumed, especially after the baby came in regard to the baby's bottles, for she was afraid that some poison might inadvertently get into the bottles, and thereby harm her children. After she became

pregnant, her interest in having sexual relations with her husband also declined. They had had premarital sexual relations for about one year. She consented to this, she said, because her husband is the kind of man not to take "No," and she admired his firmness. All along, however, she seemed to have difficulty in enjoying intercourse. This difficulty continued to a certain extent after marriage, and apparently was intensified by her husband's resorting to cunnilinction to bring orgasm to her and by his asking her to perform fellatio on him, which she could not bring herself to do. After the patient became pregnant, she often refused to have sexual relations with her husband. At the same time, her obsessive-compulsive symptoms steadily increased. She found it particularly difficult to look at religious objects, such as the cross on the cover of a Bible, without being reminded of the "Central Figure," and what it used to do in her mind's eye. Once her husband's Catholic aunt moved in with them ostensibly to help the patient. This aunt's presence intensified the patient's desire to clean all religious articles or objects the aunt touched; what she could not clean, she stored away in a closet. This made it difficult for the aunt to stay on.

The patient was able to recall that the intensity of her symptoms seemed to vary greatly with certain situations. They seemed to be particularly bad when she had to stay home and was tied down to the trailer and the children. They were worse when she had quarreled with her husband and was made unhappy. From her point of view, her husband was an irresponsible spendthrift and often sought to undermine the discipline she had tried to instill in her children. Once they had a heated argument over taking the children with them to see a movie. She wanted to have the children with them, while her husband did not. When the children began to fuss in the theatre, her husband reproached her with an "I told you so" attitude. She felt very angry and helpless and did not enjoy the movie at all. She could not sleep that night. She dreamed that she was a single girl again, living with her old roommate in the city, and found herself compulsively cleaning the toilet. Some questioning brought out the fact that the toilet had been touched by her Negro maid whom she suspected of being promiscuous and therefore "dirty."

Treatment

The treatment of this patient was interrupted when she decided to move from the South to the metropolitan city in the North where she had worked before. She made this move because her husband was in the armed services and was expecting to go abroad at this time.

Roughly speaking, the course of the treatment so far had been as follows: The first stage, covering about 10 interviews, was directed toward establishing rapport with the patient. During this period recollections of anxiety-provoking experiences came so fast and were so trying that the patient found it difficult to continue. During the next stage, consisting of another 10 or 12 interviews, she was helped to understand the relations between her past experiences and present symptoms. In the third stage, an attempt was made to help her to put her understanding into practical use, especially in her marital relations.

We have also found it helpful to pay due respect to the patient's self-picture and ego ideals. It seems that there was very little emphasis on cleanliness in her family. Her toilet training, she recalled, consisted of just going to the "pot" everytime she felt the urge. The house they lived in had no toilet. Every morning, the pot was emptied in the sink near the kitchen. In fact, her mother always looked overworked and the house was generally untidy. Her paternal relations, especially her father's sister, however, were different. They were very critical of the disorderly condition of the patient's home. She sought to identify herself with her father's family by being prim, neat and lady-like, and they considered her the best behaved child in the family. This has since become her self-picture, and it may account for the fact that as a child she was not as free and easy-going as her siblings and that of all the children who saw the stranger in the house exposing himself, she alone reacted with a mixture of horror and fascination and manifested obsessive-compulsive symptoms in her early teens. In spite of the remission of these early symptoms, the picture of being an exceptionally clean and chaste girl remained and followed her into marriage, expressed in an inability to enjoy sexual relations even when they

were legally and socially sanctioned. By paying due respect to this self-picture of the patient and her lofty ideals and refraining from directly confronting her with the unconscious sexual and aggressive impulses her symptoms clearly showed, we have been moderately successful in letting the facts she communicated speak for themselves, and in allowing her to recognize and accept those unacceptable impulses at her own pace. As this process gradually took place, her symptoms began to subside in July. By the time the patient talked about moving to the North, in December, her symptoms were, for the most part, virtually gone.

What gradually took place may be gleaned from a dream she had after the thirty-fifth interview. She dreamed that a dirty unshaven man was at the front door of the trailer. The door was open but the man did not enter. She took her children to the back of the trailer, being afraid that the man might enter and do her bodily harm. From other dreams we have learned that the dirty, unshaven man symbolized for her the impulses which she had found difficult to accept. But now, in this dream, the door of her trailer, or her consciousness, was open to accept them, even though a considerable amount of anxiety remained.

Comment

This is not the place to go into an exhaustive theoretical discussion of this case. Perhaps a few interesting points may be briefly mentioned.

First, although the symptoms of this patient are obsessive-compulsive in nature, the sexual impulses for which they are compromise formations are predominantly "genital" or oedipal, rather than anal sadistic as one would expect on the basis of the traditional psychoanalytic formulations about the obsessive-compulsive neurosis. Furthermore, the hostile impulses shown by her symptoms and directed toward her husband and children seem to be directly related to observable frustrating situations; it is difficult to see how they are related to anal eroticism.

Second, the stress on toilet training, which theoretically is often related to the genesis of obsessive-compulsive symptoms, seemed conspicuously absent in this case. Instead, it seems to be her over-all identification with the parental relatives and their sub-culture, and her subsequent acquisition of a puritanic self-picture and highly moralistic ego ideals that prevented her common sense acceptance of natural biologic impulses.

Third, the foregoing considerations naturally led us to the conclusion that, in this case at least, and so far as the available evidence indicates, obsessive-compulsive symptoms apparently do not have as much connection with toilet training or anal eroticism as is generally assumed; they seem to be essentially an attempt, however ineffective, on the part of a very immature person to maintain self-esteem in the face of conflicting impulses or, better still, conflicting roles that she wants to occupy at the same time: the role of a mature and assertive woman, an adequate wife and a loving mother, on the one hand, and that of a carefree and unattached girl whose sole basis of security lies in conformity and submissiveness, and who has only to be clean and tidy in order to be loved and cherished.

I've never been any place in the world, and that includes the Soviet Union, where, when one talked about the problems of the sick and the crippled, and the disabled, regardless of race or creed or color, geographic barriers, or iron or bamboo curtains, you couldn't speak a common language. That's why I feel that we in medicine have such a magnificent opportunity, and also such a heavy responsibility, because we possess this language that goes beyond the present babble of tongues, and we've seen its results in so many places.—Rusk, H. W.: Stress in the World: The Individual and the Doctor, Med. Ann. District of Columbia 27:262 (May) 1958.

Botulism Occurring As An Isolated Case

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STATESVILLE

The last case of botulism occurring in North Carolina was reported in 1934. Recently we had such a case and are reporting our experience in the hope that it might be of some value to other physicians in the state.

Case Report

A 63 year old married housewife who lived on a farm was admitted to Iredell Memorial Hospital, October 31, 1958, with the chief complaint of headacre, dizziness, nausea, and inability to stand or balance of about 24 hours' duration. She had vomited once. She was referred to the hospital by her family doctor for suspected cerebral hemorrhage. She had been well and had worked until the onset of the present illness about 24 hours previously. She had noted headache, vertigo, nausea, and inability to stand or balance because of generalized muscular weakness. She also complained of diplopia, and there was some nystagmus on lateral gazing, particularly to the right.

In the emergency room her blood pressure was 220 systolic, 110 diastolic, but there was an obvious paralysis.

The patient had had a slight congenital squint all her life. This fact led to some delay in diagnosis. She complained on admission of poor vision, but this difficulty appeared to be due to nystagmus and poor accommodation. Nausea was persistent but not severe.

The patient had had an uneventful menopause about 20 years previously, and there had been no bleeding since. There was no history of any significant familial diseases. As a young girl, she had had an abscessed tooth, with drainage and deformity of the right mandible in the midportion due to osteomyelitis. However, this condition had caused no difficulty since the illness many years before.

Physical examination

The patient was a large, well developed, obese, ruddy-complexioned white woman. The temperature was 98.6, the pulse rate 88, and respirations 15 per minute. The ears were normal. The pupils were equal and reacted sluggishly to light. The fundi showed some AV nicking, with tortuosity and silvering. No hemorrhages or exudates were noted, and there was no choking of the discs. There was a slight congenital squint and nystagmus on lateral gazing to the right. The neck was supple and the throat normal. Examination of the thyroid showed slight generalized enlargement, particularly of the right pole, but no definite nodules. Expansion of the chest was bilateral and equal. The breasts were free of nodules. The lungs were clear to auscultation and percussion. Examination of the heart revealed A-2 to be greater than P-2. Sounds were of good quality. No murmurs were heard. The point of maximal impulse was in the fifth intercostal space, 12½ cm. from the midsternal line.

The abdomen was obese and soft, and there were no masses, tenderness, or spasm. The liver and spleen were not palpable. No surgical scars were noted. The genitourinary tract was considered as normal, but a pelvic examination was not made. Examination of the rectum was not remarkable, and the patient had normal, brown-colored feces. The complexion was ruddy, suggesting considerable exposure to the elements. There was no significant lymphadenopathy.

Although the patient complained of being unable to stand, she moved all extremities well, and her instability appeared to be due to weakness rather than paralysis. There was no ankle edema. Peripheral pulsations were equal and adequate. The tendon-stretch reflexes and abdominal reflexes were present and equal bilaterally. No pathologic reflexes were elicited.

Except for an old osteomyelitic deformity of the right mandible, the skeletal system appeared to be normal and the joints relatively supple. The diagnosis on admission was hypertensive cardiovascular disease, with the possibility of acute labyrinthitis on a circulatory basis.

A 12-lead electrocardiogram on admission showed occasional premature ventricular contractions with fairly marked left ventricular hypertrophy. Some digitalis effect was evident. The patient had been taking digitalis since an episode of decompensation one year previously. Since then she had been active, performing her usual farm chores, but had continued to take 1 tablet of digitalis daily.

Roentgenograms of the skull showed no abnormalities. A supine film of the chest showed the bony thorax to be intact. The heart appeared to be somewhat enlarged, with a cardio-thoracic ratio of 15.5 cm. in relation to a transverse diameter of the chest of 30 cm. The aorta was elongated and tortuous, and showed some calcific changes. The intrapulmonary vascular markings were mildly increased, but no definite signs of cardiac failure were evident. There was no evidence of any active inflammatory disease, and the pleural spaces were clear. The aorta showed some arteriosclerotic changes, and there was mild hyperemia through-

out both lungs. No active inflammatory disease was noted.

Accessory clinical findings

On October 31, a voided specimen of urine showed a pH of 7, no albumin, and no sugar. Microscopic examination revealed a few amorphous phosphate crystals. Repeated urinalyses during hospitalization revealed a pH which was usually 5 or less. The specific gravity varied from 1.005 to 1.024, depending on hydration. The urine throughout was negative for albumin and for sugar except for a single 1 plus specimen following intravenous glucose the evening before. There was never any acetone. Microscopic examination showed an occasional white blood cell per high powered field, and some epithelial cells at times. A serologic test for syphilis was negative.

The white blood cell count was 11,000, with 60 per cent neutrophils, 39 per cent lymphycytes, and 1 per cent eosinophils. During hospitalization the white blood cell count rose as high as 18,600, with neutrophils increasing to 85 per cent during dehydration and recovery. The hemoglobin was 15 Gm., and the hematocrit was 50 on admission, rising to 55 with dehydration but returning to 42 before discharge. The mean corpuscular concentration was 30 per cent. The blood urea nitrogen was 13.6 mg. per 100 cc. A fasting blood sugar was 122 per 100 cc.

A study of the spinal fluid done on November 5 revealed 3 to 4 lymphocytes, and culture of the spinal fluid was negative.

Hospital course

The patient's blood pressure was elevated on admission, but the systolic pressure gradually came down to between 140 to 160 mm. of mercury, while the diastolic pressure remained about 70. The temperature never rose more than 1 degree during her entire illness. The pulse rate after the first day was completely regular, averaging about 80 per minute. During the development of paralysis, she had a bradycardia ranging from 55 to 60 per minute.

On admission the patient was placed on a regular low salt diet and given bed rest with bathroom privileges. She was given 100 mg. of whole root Rauwolfia and 500 mg. of Diuril twice daily. A quick-acting barbiturate was given as needed for sleep once during the night. For nausea and dizziness she was given 25 mg. of Phenergan intramuscularly every four hours. After admission she continued to complain of diplopia and poor vision. The latter appeared to be a problem of accomodation rather than actual visual loss. She continued to complain of rather marked weakness, but the neurologic findings remained unchanged. She also complained of constipation and some headache.

On about the third hospital day she appeared somewhat more listless and somnolent than usual, and an overdose of sedative was considered but later ruled out. On the fifth hospital day she became unable to swallow and regurgitated fluids through the nose. At that time there was marked weakness of the levator muscles of the eyes, associated with bilateral ptosis. She could shut but not open her lids. She had good use of her extremities, but tired easily. Myasthenia gravis was suspected, and 1.5 mg. of neostigmine with 0.4 mg. (1/150 grain) of atropine was given intramuscularly. There had been no dramatic change within 30 minutes. The patient felt that she could swallow better, but no objective improvement in swallowing was noted. The use of neostigmine was considered as a negative test, but she was given 1 cc. of Prostigmin in a 1:2000 dilution every six hours as a clinical trial. At that time all other medication was stopped except for the intravenous administration of fluids to compensate for the lack of oral intake. Daily infusions of glucose, water, vitamins, and occasionally saline had to be continued from this time on.

On the following day the patient did not appear to be improved, and there was no significant response to Prostigmin. A spinal puncture revealed an essentially normal pressure of 125 mm. of water. The fluid was clear. On the sixth hospital day she had shown no response to neostigmine and it was decided that the clinical picture resembled botulism. By then ptosis had developed, as well as paralysis of the intrinsic eye muscles and loss of all extraocular eye movements. Vision was retained, however, and the eyegrounds were unchanged. At this time, a diagnosis of botulism was made, although there was no history of the disease in the community and the source of the toxin could not be determined.

Severe dysphagia prevented the patient from taking any food or fluids by mouth. Neither her inability to swallow nor her general clinical picture could be explained on the basis of a tumor, infection, or hemorrhage. In spite of her difficulties, she was conscious and her sensorium was clear. She was slightly somnolent, but could easily be aroused. Her speech was thick and difficult, but she was able to communicate throughout her illness.

The diagnosis of botulism was reported to the local Health Department. No other cases had been reported and there was no history of the disease in the community. Health Department representatives found that the patient had handled a can of outdated oysters about 36 hours before admission. She denied eating or tasting them, since they were obviously spoiled, but there had been a cut on her hand when she opened the can.

On the ninth hospital day a skin test for botulism was positive, raising a red wheal about 3/4 inch in diameter. She was given 50 mg. of cortisone intramuscularly, followed by the infusion of

one ampule of bivalent botulism antitoxin, 10,000 units each of A and B, in 1,000 cc. of a 5 per cent solution of glucose and distilled water. She was also given 100 mg. of hydrocortisone intravenously. Cortisone was continued in diminishing doses for five days and then discontinued.

By the tenth hospital day the patient had shown no change. On the eleventh day she was seen by four physicians from the State Board of Health, who concurred with the clinical diagnosis of botulism. Despite an intensive investigation of the household and community, the exact origin of the toxin remained obscure. We considered it most fortunate that we had not had an epidemic of the disease.

On the thirteenth hospital day the patient's condition remained unimproved. She was still maintained on intravenous fluids. No sedatives were given, aspiration was done frequently, and every effort was made to keep her moving in bed. On the nineteenth day she showed progressive weakness, but we were encouraged when she sipped one or two teaspoons of water in 36 hours. We were then considering tubal feedings, but our eye, ear, nose and throat consultant advised against these because of the danger of aspiration. He also advised against a tracheotomy at that time. It was recommended, however, that a gastrostomy be considered, if the patient was not able to take nourishment soon.

By the twenty-fifth hospital day the patient had begun to take sips of water and was supplementing her intravenous intake by sipping about 50 cc. of fluid per 24-hour period. By the twenty-sixth day she was taking amounts up to 150 cc. per day orally. Her intake gradually increased as her swallowing function improved.

On the first day of December, or the thirty-first hospital day, she was able to take a soft diet for the first time. Movement of the left eye began to return, with slight movement of the lid and very slight movement of the extraocular muscles. Thereafter she progressed steadily. On the thirty-sixth day she could move the left eye well, being able to open the lid enough for vision. The lid of the right eye was showing progressive improvement, along with slight movement of the extraocular muscles. The patient was taking a soft diet well, and intravenous nourishment was discontinued. On the thirty-ninth hospital day, she was able to stand and walk a little with assistance. By the fifty-third day she was able to use her eyes well and was eating and walking with help. She was therefore sent home to continue her convalescence.

When seen in the office on January 24, 1959, the patient had apparently made good progress toward complete recovery. Except for some weakness while watching television or reading, the eyes were good for ordinary use. She was able to do her house work, although she still tired more easily than formerly.

Comment

Botulism has been known and recorded for more than two centuries, and sporadic outbreaks or small epidemics occur in the United States almost yearly[1]. The disease is caused by a potent toxin produced by *Clostridium botulinum* growing under anaerobic conditions, usually in improperly canned food with an alkaline pH. *Cl. Botutinum* is a common natural contaminant of the soil. In itself it is innocuous, but when grown in an anaerobic environment it elaborates an exotoxin which, if it gains entrance into the human body, is a potent poison having a biochemical affinity for nerve cells. The sites of attack are the myoneural junctions and parasympathetic nerve endings[2]. The toxin does not affect the central nervous system, nor does it abolish conduction in the nerves themselves. The toxic effect involves acetycholine, inhibiting its synthesis or preventing release from terminal fibers. Clinically, it affects primarily the extracranial nerves except for the optic and olfactory nerves, which are spared. Thus a rather classical clinical picture is produced. Usually the sensorium is clear, although there is marked muscular weakness and somnolence. The only pain experienced is headache. There is paralysis of both the extrinsic and intrinsic muscles of the eye, and occasionally ptosis develops. Muscles of the neck may be so involved that the patient has difficulty holding the head erect. Increased vagal tone may produce bradycardia. Severe dysphagia occurs, and most of the fatalities are caused by aspiration or asphyxiation from regurgitation of liquid or food. There is total absence of the swallowing function. Interestingly, gastrointestinal symptoms are minor or absent in about two thirds of the patients.

There are five types of toxin, A, B, C, D and E. However, only A and B are thought to be of significance in human disease, type A causing a far more severe illness than type B. The symptoms are usually progressive for about 10 days. If the patient survives the initial onslaught, recovery is gradual but complete. The diagnosis rests upon the clinical picture, and is made easier of course, when several cases stem from a common source of toxin.

The present case presented a puzzling diagnostic problem. I had never personally seen a case of botulism before, and there were no similar cases offering parallel data as in a small epidemic. Unfortunately, the diagnosis of botulism was not reached until almost every other possibility had been excluded. In addition to this delay, valuable time was lost in the attempt to find the source of toxin. We thought that the patient might have obtained the poison from the can of oysters which she had opened about 36 hours prior to the onset of illness. Although the oysters were discarded, we believed that she had probably tasted them first. She vigorously denied doing this, however. We then thought that perhaps entrance was obtained through a previous cut on the hand, but we have never proved that the can was contaminated. It was not recovered until several days after being emptied, when studies were of doubtful value.

The fact that the patient was the only one ill in a rather large household makes one wonder if contaminated food was actually the source of the poison. There were many home-canned products in the house, but none was positive for *Cl. botulinum*. The cut on the patient's hand had been incurred a week or 10 days previously, and had not been treated. Fairly severe infection had developed, lasting for several days. The wound was beginning to heal at the time of admission to the hospital and was well healed five to six days later. At that time, we were unaware of the actual clinical diagnosis. This patient worked frequently in the soil and dug with her hands. At the time that her hand was cut and infected, she had been digging peanuts and her hands had been rather constantly in the soil. It has been suggested recently that it is possible for *Cl. botulinum* to contaminate an infected wound, there undergo reproduction under anaerobic conditions and produce enough of the toxin to result in clinical botulism[3]. This certainly is an intriguing possibility in this patient. Here again our delay in diagnosis prevented adequate clarification of the point. It is to be noted that the patient was given a vial of A and B botulinum antitoxin. This was given after the toxin was well fixed in the nervous tissue and of course was of doubtful value. The skin test with the antitoxin was markedly positive. Therefore, she was given 100 mg. of hydrocortisone intravenously with the antitoxin and also was given full doses of cortisone intramuscularly (50 mg. every four hours) with gradual reduction of the dosage until it was discontinued in five days. It has been shown experimentally that cortisone has no effect on botulinum toxin[4]. It was felt, however, that the antitoxin should be given, although it was of doubtful value. Since it has been proved that cortisone will not interfere with fixed antibodies, we thought that by giving cortisone we would not interfere with the potency of the antitoxin, but might be successful in preventing any severe allergic reaction to the serum.

The treatment of this patient consisted almost entirely of nursing care; all sedatives and other drugs were discontinued. She was given constant care, with frequent aspiration and intravenous feedings. No oral feedings or medication was attempted by mouth until it was felt that some muscular function was returning. Her eventual recovery was largely due, as it must be in any of these cases, to the excellent and persistent nursing care she was given by the hospital personnel. At this time, she is making a complete recovery, as would be expected with this illness.

Summary

An isolated clinical case of botulism has been reported. This is the first case of botulism reported in the State of North Carolina in 24 years. Our clinical experience and opinions concerning this patient have been reported in the hope that they will be of some assistance to other North Carolina physicians seeing or treating this disease.

The author wishes to express his apreciation to Dr. J. R. Robertson, Harmony, North Carolina, through whose courtesy he was permitted to see and treat this patient; to Dr. A. J. Causey, Statesville, North Carolina EENT consultant; and finally to Dr. E. R. Ward, Iredell County Health Officer, his staff, and to Dr. Jacob Koomer and colleagues of the State Health Department, whose courtesy and constructive advice help make the practice of medicine in North Carolina such a pleasure.

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Cutis Verticis Gyrata

Report of a Case

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CHAPEL HILL

The earliest reported case of cutis verticis gyrata appears to have been that of Robert[1] in 1843. The second and third recorded instances were observed by Auvert[2] in 1854, and subsequent cases were noted by Poggi[3] in 1884 and Lombroso[4] in 1890. In 1893 McDowall[5] and Cowan[6] were the first to record the occurence of this abnormality in association with microcephalic mental deficiency, and since that case report Moller in 1903[7] and Judassohn, 1906[8] described similar instances. In 1907 Unna[9] presented 3 cases and coined the name "cutis verticis gyrata." The latter is also known under additional terms such as "corrugated skin," "bulldog scalp" and "pachydermie occipitale vorticillee."

The case presented here is that of a microcephalic quadriplegic white man, functioning on a grossly defective mental level, who has been at the Caswell Training School, for about 16 years. The family history included a case of insanity (grandmother). Otherwise no history of mental deficiency, epilepsy or cutis verticis gyrata was noted.

He is a poorly nourished, completely helpless, spastic, quadriplegic, microcephalic idiot, without speech and in appearance almost simian, with pronounced supraorbital ridges, low, narrow receding forehead and backward-bent neck. There are some two dozen furrows in the scalp averaging 3 mm. in width and 3 to 5 mm. in depth, separated by folds that are about 1-1.5 cm. in width. The folds and furrows near the mid-line are more pronounced than those laterally placed, and they adhere to one another and cannot be obliterated by traction on the scalp. In addition to the anteroposterior

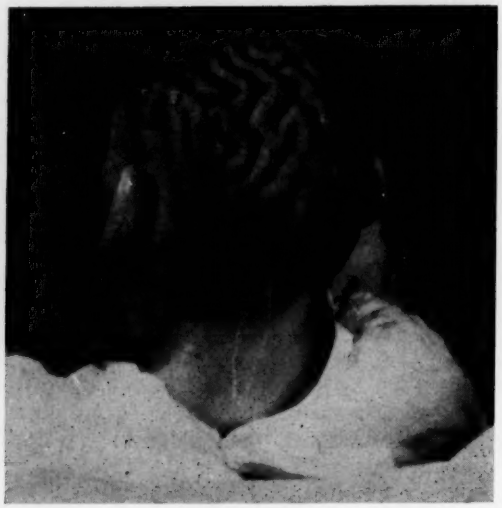

Figure 1

folds and furrows, there are other irregularities running transversely over the lower portions of the occipital and parietal parts of the head. These abnormalities are most conspicuous over the vertex. The whole scalp has acquired a corrugated cerebriform appearance, in which the folds and furrows of the scalp resemble the gyri and sulci of the brain surface. The hair is black and of fine texture.

Comment

The cases of cutis verticis gyrata cited in the literature were classified etiologically by Polan and Butterworth[10] as being idiopathic or secondary in type. The idiopathic type is ascribed to simple hypertrophy, developmental anomaly, and reversion to a lower form of life; the secondary type to pathologic conditions such as inflammatory changes, naevi, tumors, and various other miscellaneous diseases leading to the hyper-

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trophy of the scalp tissues—for example, myxedema, cretinism, leukemia, acromegaly, syphilis, and tuberous sclerosis. Since 1956, some 300 cases of cutis verticis gyrata have been reported in the world literature.

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Careless Blood Banking:
A Major Cause of Transfusion Reactions

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In 1956 physicians in North Carolina transfused 122,100 units of whole blood[1]. This number of transfusions was surpassed by only 10 other states in the Continental United States.

With the number of potentially fatal reactions placed at 1 in 500, it behooves us to realize that major causes of transfusion reactions in both the state and nation are clerical errors, improperly trained personnel, and the use of incomplete methods. Every physician should have some basic understanding of the laboratory's function in the transfusion of whole human blood.

Clerical Routines

The first weak point in any transfusion service is the collection of blood from a volunteer or paid donor. A great majority of the errors occur in improper identification of the donor blood, poorly obtained medical history, and misplaced donor tubes—that is, attaching a sample tube to the wrong bottle of blood. Many hospitals do not attach a pilot tube directly to the unit of blood. This is a violation of good blood bank technique and has been a major cause of so-called "clerical transfusion reactions." A good system would consist of a number of checks and rechecks of every record or notation concerning any individual unit of blood[2]. The blood bank should at any time be able to supply a complete clerical summary of any unit of blood in its inventory. This should include:

1. An adequate history of the donor and aseptic phlebotomy.
2. The procedures used for blood grouping and Rh typing.
3. The conditions under which the blood is stored.
4. Whether or not a particular unit of blood has been entered, and if it has been removed from the refrigerator for a period of time greater than 30 minutes.
5. The proper labeling of blood as recommended by the American Association of Blood Banks and the National Institutes of Health[3].
6. Records of cultures performed on outdated whole blood and plasma.
7. Means of certifying that the blood being studied for grouping and crossmatching actually came from the patient named on the request slip.
8. Records to prove that a unit of blood, when taken from the bank, was actually given to the patient for whom it was requested.

A blood bank that does not perform the above accepted clerical routines can be held liable for damages suffered by patients through its negligence[4].

Technical Aspects

The technical aspects are somewhat more complicated, but can be resolved in the same manner as the clerical aspects of a

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transfusion service by (1) a system of checks and rechecks, and (2) well trained technicians thoroughly acquainted with the accepted methods of good blood banking.

Medical journals today list too many tragic mistakes due to faulty or outdated techniques. A recent non-fatal example[5] was caused by using a method suitable 20 years ago when our knowledge of crossmatching and of antibody demonstrations was limited to those requiring saline as a diluent. This fact leads to this conclusion: Physicians who are not acquainted with the technical proficiency of the blood bank workers in their area are exposing patients to possible serious consequences when they order a transfusion.

Crossmatching procedures attempts to determine two facts: (1) Are the donor's red cells compatible (free from clumping) with the patient's serum (major crossmatch)? (2) Is the donor's serum compatible (free from clumping) with the patient's red cells (minor crossmatch)? Of the two, the major crossmatch is the most critical, since any transfusion of incompatible donor red cells in a bottle of blood means millions of antigen carriers ready to combine with the patient's antibody, causing vascular and organic damage, and possibly death. Incompatibilities disclosed by the minor crossmatch do not usually present as dangerous a picture as do those of the major crossmatch, because of the dilution effect on the donor's plasma by the patient's plasma volume. Destruction of red cells can be demonstrated by hematologic tests; yet rarely are the physical signs of transfusion reaction present[6].

The purpose of good crossmatching techniques is to prevent these reactions from occurring, and the proper interpretation and application of tests is the way to the avoid transfusion reactions caused by incompatibilities between donor and patient.

Crossmatching techniques are flexible enough to allow any number of methods to be used, depending upon the individual case. A patient with no previous history of transfusion or pregnancy may be safely crossmatched with a donor blood using both the saline and high protein crossmatch. If the patient has received previous transfusions, has been pregnant, or is unconscious and no history can be obtained, an *indirect Coombs crossmatch should be performed in addition to the saline and high protein crossmatches*[7].

With the availability of potent, specific typing and grouping serums, with refinements in clerical procedures, and with access to centers where the latest techniques in blood grouping and crossmatching are performed, there is no excuse for the continuation of careless, outmoded, and potentially dangerous transfusion services.

Summary

1. A brief summary of the causes of transfusion accidents is given both from the clerical and technical side.
2. Questions are raised as to the clerical routines used in local hospitals.
3. Accepted crossmatch techniques are briefly listed.

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Corticosteroid Therapy in Non-Perforating Eye Injuries With Intraocular Hemorrhage

Report of a Case

G. F. SMART, M.D.

ASHEVILLE

The incidence of nonperforating eye injuries is extremely high, as evidenced by reports of 36 cases in the recent literature. One of the most frequent complications is intraocular hemorrhage, usually a hyphema. The seriousness of such an injury depends upon the extent of tissue damage. The prognosis of a relatively mild eye injury is seen to be more grave in the light of possible complications. These include iridodialysis, dislocation of the lens, cataract, choroidal rupture, retinal detachment, glaucoma, corneal staining, hyphema with primary and secondary hemorrhages, subconjunctival hemorrhage, macular lesion, and corneal damage. The greatest incidence occurs in children.

This report is primarily concerned with primary and secondary hemorrhages. Other pathologic results of the injuries are mentioned.

Sequence of Pathologic Changes

The amount of hemorrhage into the anterior chamber depends upon the result of the contusion, ranging from a slight suspension of red cells and pigment to a massive clot. The sequence of pathologic changes includes phagocytosis, formation of hemosiderin, scarring of the ruptured area, organization of the clot, anterior and posterior synechiae, occluded pupil, obliteration of the anterior chamber, fibrosis of the iris, colobomas, corneal staining, recurrent hemorrhages from newly formed vessels, blocking of the iris angle, and secondary glaucoma with eventual loss of the eye.

Other possible changes are a rupture of the ciliary process, hemorrhage into the posterior and vitreous chambers, damage to the zonular fibers, suprachoroidal hemorrhages, choroidal tears, pre-retinal hemorrhages, subretinal hemorrhages with retinal detachment; edema of the retina and macula with fibrosis, cystoid degeneration, a macula hole, and disinsertion at the ora serrata; contrecoup concussion of the retina (snow white retina with retinal hemorrhages), dislocation of the lens, posteriorly or anteriorly; cataract (rosette), a pigment ring (vossius ring) on the anterior surface of the lens capsule. Damage to the sphincter pupillae may produce mydriasis.

Clinical Findings

A definite and frequently severe inflammatory reaction is present. This is represented early in the course by increased vascularity and edema of the involved structures, exudate of fibrin, flare in the anterior chamber, pain, generalized toxic effects, and elevated temperature. Later developments are phagocytosis and a granulomatous inflammatory process.

Although there is no true infection, the stages of a traumatic inflammatory reaction may well be compared with bacterial inflammatory reactions of the eye. Thus, depending upon the extent of the injury, there may be an acute traumatic iritis or a massive panophthalmitis.

The history should include any previous injuries or disease. Examination is usually limited to the anterior segment in massive hyphemas, but the posterior segment can be examined as the blood is absorbed.

Treatment

Primary hemorrhage

Treatment of hyphema has consisted of injection of air into the anterior chamber of the eye to prevent secondary bleeding and to protect the cornea from blood stain; paracentesis; mechanical removal of the clot; the use of miotics, mydriatics, systemic calcium, vitamins C and K, coagulants, sedatives, and carbonic anhydrase inhibitors.

Even when the amount of blood in the anterior chamber is minimal the patient should be hospitalized and put on rest, supplemented by sedatives. The eye should be bandaged. Coagulants may also be given. The size of the pupil, when visible, may be used to determine the use of miotics or

mydriatics. It has been stated the hyphema and hemorrhage, the most common result of a non-perforating injury to the eye, are usually absorbed without any inflammatory reaction or trace into the iris crypts, lymphatic spaces, and canal of Schlemm (Wolff).

Treatment is aimed primarily at preventing a secondary hemorrhage. If this effort is successful, the patient can be discharged in five days.

Secondary hemorrhage

Secondary hemorrhages are most common during the second, third, and fourth day. If a secondary hemorrhage occurs, as manifested by sudden pain and fresh blood in the anterior chamber, further loss of vision, and increased intraocular pressure, the patient should be given a full course of corticosteroid therapy.

The rationale of corticosteroid therapy is chiefly to decrease fibrinogen and fibrin in the anterior chamber and thereby relieve the obstruction to the iris crypts, lymphatic spaces, and canal of Schlemm. The glaucoma is thus relieved and the products of the hemorrhage can be absorbed. Anti-inflammatory action occurs (in connective tissue) regardless of whether the origin is allergic, infectious, or traumatic-stress. Substances released by cell damage (chiefly fibroblasts) continue the process of inflammation.

The corticosteroids act by decreasing fibrinogen and fibrin at the site of inflammation, inhibiting hyaluronidase, and maintaining a good capillary bed.

Case Report

The patient, a 17 year old youth, was struck in the left eye by an acorn on October 6, 1957. Pain and loss of vision occurred two days later. He was first seen on the third day, at which time he had light perception in the injured eye. The lower half of the anterior chamber was filled with old blood, and the upper half with fresh blood. The tension was 12 mm. of mercury by the Schiotz tonometer.

The temperature was 99.8 F. on admission. A urinalysis was negative for sugar, albumin, and cellular elements. The blood disclosed 11,600 white blood cells, with 75 segmented cells, 19 lymphocytes, 4 monocytes, and 1 eosinophil. V.D.L.R. was nonreactive.

On October 9, the day of admission, the patient was placed on rest, sedatives, and vitamins K, C, and B. During the night he had additional pain in the eye, and there was evidence of fresh bleeding. On October 10 he was placed on cortocosteroid therapy. On the following day he was free of pain, his vision had improved to the extent that he could count fingers at a distance of 3 feet, and the hyphema was reduced to one-half of the anterior chamber. On October 13 he could count fingers at 12 feet; the pupil was seen to be round and the fundus was hazy; blood was present in the lower third of the anterior chamber. On October 14 there was no blood grossly apparent in the anterior chamber; the conjunctiva was moderately red. On the following day the patient could read news print; the optic disc was well outlined and the fundus was readily visible, having a glistening appearance. He was discharged from the hospital on October 16, 1957, and follow-up examination revealed a normal eye with a vision of 20/20.

Summary

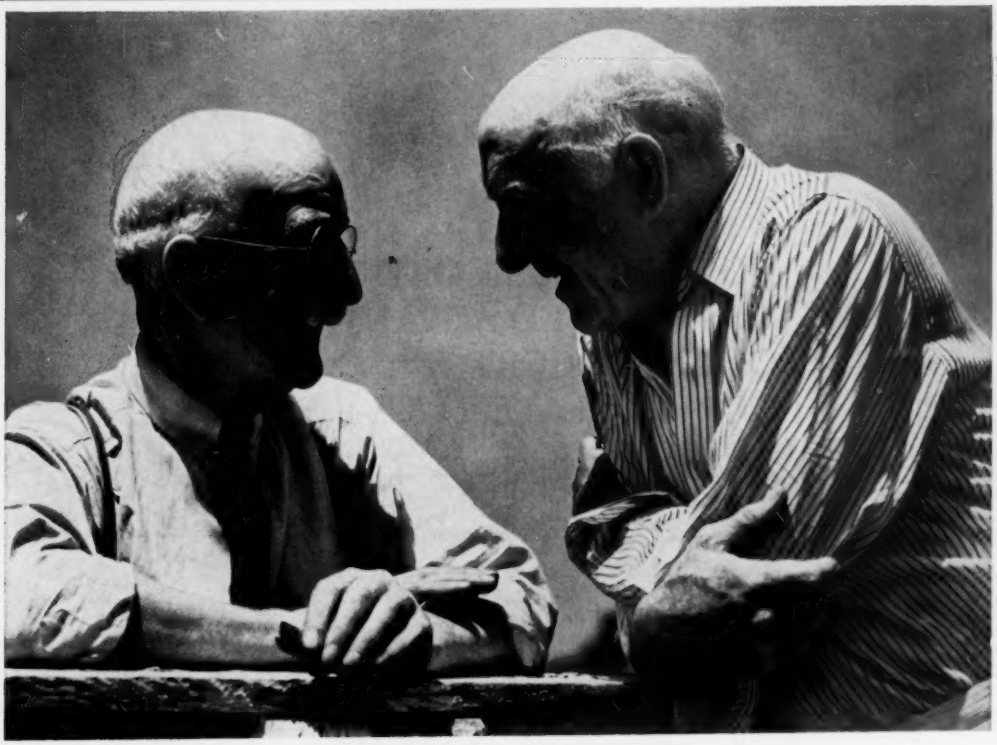
1. Nonperforating injuries of the eye may present serious complications.

2. Primary hyphema frequently subsides on rest and sedation.

3. Secondary hyphema threatens loss of vision and may be treated successfully with corticosteroids.

4. A case is presented in which a secondary hyphema is successfully treated with cortocosteroids.

The end of the first decade of social revolutions finds the profession in no mood for jubilation. The politicians must inwardly regret their enormous errors of calculation. Whatever benefits it has received the public is beginning uneasily to wonder whether the price has not been too high in this free-for-all scramble for medical attention.—Editorial, Brit. M.J. 2:33 (July 5) 1958.



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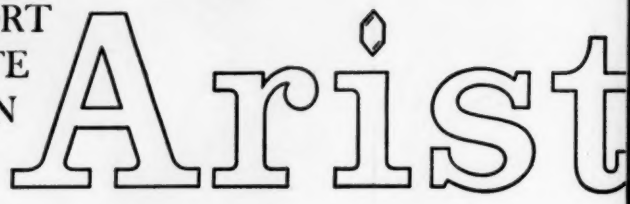

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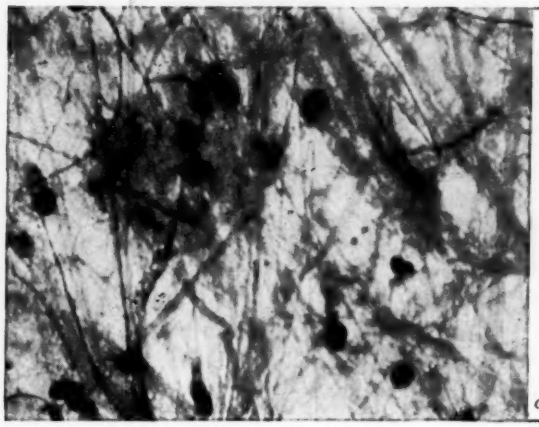

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Present Concepts of the Hazards of Radiation

A. T. CROOM, M.D.

HIGH POINT

The purpose of this paper is to acquaint physicians with present opinion regarding the dangers involved in radiation and to outline accepted methods of protecting patients as well as physicians using ionizing radiation.

Within the first year after William Conrad Roentgen discovered x-rays in 1895, almost a thousand papers on the subject appeared in the world literature. As early as 1896 reports were being made on the skin reactions following exposure, and in 1900 a report in the English literature outlined many of the hazards involved[1]. This is to indicate that the dangers of radiation were known early. Nevertheless, more than 100 scientists lost their lives as the result of early experimentation. It should also be noted that the early equipment was crude by present day standards, and many safety factors now incorporated were then unknown.

Ever since the atomic era was officially ushered in by the atomic blasts of 1945 and subsequent tests have added to atmospheric contamination by radioactive elements, the whole subject of radiation has been widely publicized. Justifiable dangers have been outlined, and some biased and probably inaccurate predictions have been used as "scare-weapons." This publicity has led to considerable concern among the lay population and physicians as to the present status of diagnostic and therapeutic procedures.

Tolerance Levels and Sources

We must first consider the amount of normal activity derived from cosmic rays and their interaction with outer atmosphere, and from the radioactive substances in the earth and our own bodies. It has been estimated that this normal exposure amounts to a total body dosage of 0.1 r per year, and that at present man-made sources contribute about the same amount. Recommendations of the U. S. Bureau of Standards outlines a safe dose of 300 milliroentgens per week for those engaged in work with ionizing radiation over prolonged periods. It is also suggested that the dose during the first 30 years of life be kept to 10 r. From most recent studies it would appear that we are well within this limit for the average population[2]. Further reductions in safe levels to 100 milli-roentgens per week are now being advocated.

Effects of Long-Term, Low-Dosage Exposure

Leukemogenic effects

Reports of the Atomic Bomb Casualty Committe attempting to correlate the incidence of leukemia with dosage as estimated by distance from center of the blast, indicate a significant statistical association[3]. March and Uhlrich[4] have suggested that radiologists have a higher incidence of leukemia than do physicians not closely associated with ionizing radiations. Many of these reported cases, however, occurred during the earlier days, when safety precautions were less adequate than they are today. Other evidence of leukemogenic effects will be found in the work of Court-Brown and Doll[5], reporting an increased incidence in patients treated for rheumatoid spondylitis, and in that of Stewart and Associates[6], reporting from Oxford on the frequency of pelvic x-rays late in pregnancy of children later developing leukemia.

On the one hand a linear relationship of dosage and incidence has been attempted, with extrapolation of results to predict the effects of present day dose levels. On the other hand it has been stated that, although no threshold dose can be established, it would appear in laboratory animals that with a dosage less than 200 r no leukemia is produced[2]. From present evidence it would appear wise to assume that there is no threshold below which safety can be guaranteed.

Carcinogenic effects

It has long been established that low grade exposure of the skin produces an increased incidence of squamous epithelioma. Simpson and Hemplemann[7], in a survey of children or young adults having carcinoma of the thyroid, contend that there was increased exposure by means of irradiation

to enlarged thymus as compared with controls from the general population. This report has been criticized as a statistical conclusion, and now appears academic since the procedure of irradiating the mediastinum for an enlarged thymus has been largely abandoned.

Mutagenic effects

It now seems reasonable to assume that all mutagenic effects are undesirable. Genetecists have estimated that the generation-gonadal dose is at present 4.6 r ± 3[2]. They further estimate the dose required to double the present mutation rate to be between 30 and 80 r. It would appear that we are within safe levels at present, but unfortunately, all available evidence points to the fact that there is no threshold as far as mutations are concerned. Kaplan states that mutations are produced as a linear function of dose and are independent of rate. Within reason, therefore, every attempt should be made to restrict the gonadal dose as much as possible during the child-bearing period.

Effects on longevity

Warren has concluded that the life-expectancy of radiologists is five years shorter than that of other physicians and that they die earlier from all causes[8]. Lewis has criticized this study as being uncorrected for age, and states that when this correction is made there is no significant difference in age at death between the two groups[2].

Control of Dosage

The responsibility for the control of dosage is divided between the referring physician and the radiologist. Certainly the abandonment of useful procedures would prove more costly in morbidity and mortality than the deleterious effects now recognized. It would appear, however, that diagnostic and therapeutic procedures should be limited to those cases having good medical indications. Routine pelvimetry is being abandoned, but in the problem case it may be of invaluable aid. The use of multiple x-ray studies as a substitute for a thorough history and physical examinations is to be deplored. Kerman suggests that chest fluoroscopy be restricted to those cases needing follow up of chest films, as the dose to patient and examiner is considerably higher than that produced by standard chest x-ray[9]. It is also suggested that survey chest films be restricted to high-yield groups, such as positive tuberculin reactors, rather than offered to the populace as a whole. X-ray therapy is being limited more and more to malignant conditions or restricted in benign diseases to cases which do not respond to other methods. By the employment of cones, collimators, filters, high speed screens and films and fast developing techniques, the radiologist can reduce the dose to an exposure factor of 0.15 as compared with present dosage[2]. The use of lead shields to protect the gonads can also be utilized to advantage.

Equipment is now vastly improved, and the calibration of fluoroscopic instruments to stay within the accepted dose of 21 r per minute at table top is imperative. As the image intensifier is perfected and becomes generally available, this development will also be of considerable aid in reducing the dosage. It goes without saying that proper accomodation, the use of protective gloves and aprons, and the avoidance of fracture reduction within the field of radiation are musts for the physician's protection.

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History of Base Hospital Number Sixty-Five

WILBURT C. DAVISON, M.D.*

DURHAM

Compiled from the records of F.M. HANES, M.D.†; F.R. TAYLOR, M.D.†; J.M. NORTHINGTON, M.D.; S. WALLACE HOFFMAN, M.D., and others.

†Deceased

During the First World War Base Hospital No. 65 was organized and staffed by North Carolinians. In the Second World War the 65th General Hospital, affiliated with the Duke University School of Medicine, was also a North Carolina unit. In the present interval between wars, the 65th General Hospital is again being organized under the sponsorship of Duke University in a stand-by capacity. These facts may add interest to the following history of the original 65th Base Hospital in World War I.

The organization of Base Hospital No. 65 was authorized by the Surgeon General of the Army in the late autumn of 1917 under the sponsorship of Lt. Col. John Wesley Long of Greensboro, and it was almost wholly due to his untiring efforts that the early difficulties were overcome. The nucleus of a professional staff was formed from the physicians and surgeons of North Carolina, and additions were gradually made until the quota was completed. In February 1918, Maj. Frederic M. Hanes was authorized by the Adjutant General to recruit the enlisted personnel of two hundred men and a nursing staff of one hundred. These volunteers were almost entirely from North Carolina; 85 were from Winston-Salem, 55 from Greensboro, and the remainder from High Point, Asheboro, Raleigh, Statesville, Charlotte, Hickory, Fayetteville, and other towns. The roster of the original medical officers is appended.

The 65th was mobilized at Fort McPherson, Georgia, on March 19, 1918, and Major Hanes was placed in command. During the first two weeks at Fort McPherson the original enlisted personnel was attached to Army General Hospital No. 6 for training. The remainder of the authorized quota of enlisted men arrived May 4, 1918. The training of the unit was handicapped by the lack of officers, since Major F. M. Hanes and 1st Lt. F. R. Taylor were the only officers of the 65th ordered to duty at Fort McPherson. The other officers of the unit were in various training camps and hospitals and did not join the 65th until June, 1918—three months after it was mobilized. In the meantime, officers of Base Hospitals Nos. 26 and 13, then on duty at Fort McPherson, assisted in training the enlisted personnel of the 65th. Fortunately these men were of a very high type, and the clerical positions were filled with well trained men. Major Hanes was in command of the 65th until July 8, 1918, when he was relieved by Major C. S. Lawrence of Winston-Salem. The latter was succeeded on July 27 by Major W. E. Butler of Brooklyn.

On August 9, 1918, the 65th was ordered to Camp Upton, New York, for additional equipment for overseas duty. On August 29, the unit boarded the S. S. Kroonland, which sailed for France the next day in a convoy of 13 ships. During the voyage influenza broke out among the personnel. The ship arrived at Brest on September 13, and the 65th was sent to Camp Pontanezen, Brest. Three days later the unit was ordered to Kerhuon Hospital, four miles from Brest, to prepare it for the reception of patients.

The nurses, who had been assembled in New York, sailed on September 1, 1918, and reached Liverpool on September 13. They joined the 65th at Kerhuon on September 16.

Kerhuon Hospital Center

The history of the 65th from this date to its return to the States on July 30, 1919, is the history of the Kerhuon Hospital Center, for the 65th was the only unit which ever functioned there as a base hospital. This Center was planned as an embarkation hospital to receive the wounded from the forward areas of the AEF for

*Dean of the Duke University School of Medicine, Durham, North Carolina

evacuation to the States. When the 65th arrived, only about 50 per cent of the buildings, which consisted of wooden barracks, had roofs; few were entirely finished, and the water and sewage systems were still under construction. Steps were taken immediately to secure the necessary supplies and materiel so that the hospital could be opened for patients by October 15, 1918.

The epidemic of 1918

On September 20, 1918, however, when Col. Clyde S. Ford assumed command of the Kerhuon Hospital center, the epidemic of influenza-pneumonia among the American troops debarked at Brest began to assume alarming proportions, so that all the available hospital beds in Camp Hospital No. 33 and Navy Base Hospitals Nos. 1 and 5 were occupied, and the Kerhuon Hospital Center was forced to receive the patients that could not be accommodated in the other military hospitals at this Base. On September 25 a few convalescent patients were transferred from the other hospitals of the Base, and it soon became necessary to admit patients directly from the incoming transports. Within 10 days from the time of the first admission to Kerhuon, 2,000 patients suffering from influenza and pneumonia were in the wards of this hospital.

Only about one half of the buildings were covered with tarpaper, and none of the windows had been fitted with glass. The windows were covered, as rapidly as the construction force could cover them, with oiled cotton cloth, until the supply was exhausted, when burlap and other fabrics had to be substituted for window panes. As stoves were not available for heating, the wards were cold and damp from the constant rains, a condition which led to an alarming increase in the sick rate. As no system of walks or roads had even been projected, the continuous rains soon reduced all lines of transportation to pools of mud. This was aggravated by numerous open ditches dug for the unfinished water and sewage pipes. Under these conditions the stretcher-bearers, by day and night, carried a continual stream of desperately ill men to the wards.

Approximately 3,300 patients suffering from influenza-pneumonia were treated at the 65th. Sixty-six died in one day and 584 in one month! The overcrowding, seasickness, and other depressing influences of the sea voyage were important factors in this high mortality. In addition to the large number of ill patients removed from the ships, many of the troops disembarked so exhausted that they fell out on their first march to camp. When they contracted influenza, pneumonia soon followed, and half of them died. Many were taken moribund to the hospital. For example, of 70 soldiers admitted in one day to Navy Base Hospital No. 1 at Brest, 29 died during the night.

The strength of the 65th at this time was 20 medical officers, of whom only 12 were available as ward surgeons; 100 nurses, of whom 15 to 25 per cent were on the sick list; and 200 enlisted men. The constant faithfulness of this group of officers, nurses and men, under conditions little short of appalling, is the on bright spot in a memory otherwise entirely depressing and gloomy.

Change in command

On November 1, Lt. Col. F. M. Hanes relieved Lt. Col. W. E. Butler as commanding officer of the 65th. As the epidemic of influenza-pneumonia had definitely subsided at the port, the hospital was thoroughly cleaned, blankets were disinfected, and preparations made as rapidly as could be for the reception of sick and wounded en route to the States. The first hospital train from the forward areas was received October 26, 1918. The hospital staff was considerably augmented by the arrival of the following Base Hospitals which were assigned to duty at this Center: Base Hospital No. 105, Lt. Col. Edward W. Pinkham, commanding, November 13, 1918; Base Hospital No. 92, Major J. C. Friedman, commanding, December 2, 1918; and Base Hospital No. 120, Major William F. McManus, commanding, December 8, 1918.

The Center soon had 4,200 beds in operation in 105 wooden barracks as wards of 40 beds each. The number of officers attached to the 65th ranged from 35 to 200, with frequent changes. The original rosters of 100 nurses and 200 enlisted men were increased to 200 to 785, respectively.

The character of the incoming patients compelled a readjustment of the staff on a surgical basis. Up to this time the cases were almost wholly medical; they now became almost wholly surgical. The evacua-

tion of patients to transports presented wholly new problems. For example, 1,592 wounded were received from hospital trains on November 21, 1918, many of them after a journey of three or more days without the daily dressings which they needed. They then had to be prepared and equipped for the voyage to the States.

Col. Clyde S. Ford remained in command of the Kerhuon Center until December 2, 1918. From the first patient on September 25, 1918, to March 31, 1919, 37,133 were admitted, of whom 29,010 were evacuated to the States, 3,465 were discharged to duty or transferred to other hospitals, and 658 died. The maximum daily census was 3,449.

On July 30, 1919, the 65th boarded the S. S. Leviathan for home, and arrived at Camp Merritt, New Jersey, on August 6. The personnel received honorable discharges at Camp Lee, Virginia, on August 12, 1919, after 17 months of strenuous training and service, a record which was highly commended by everyone, including General Pershing, who had any contact with the officers, nurses and enlisted men of the 65th.

Roster of the Original Officers of Base Hospital No. 65 in World War I

Ashby, Edward C.	1st Lt., MC	Greensboro
Beall, Louis G.	1st Lt., MC	Black Mountain
Brooks, Don D.	1st Lt., MC	Connellsville, Pa.
Bullitt, James B.	Capt., MC	Chapel Hill
Butler, William E.	Lt. Col., MC	Brooklyn
Clark, Hugh E.	1st Lt., MC	Rocky Mount
Edgerton, Milton T., Jr.	1st Lt., MC	Greenville, N. C.
Ellington, Amzi J.	1st Lt., MC	Raleigh
Engberg, Edward J.	1st Lt., MC	St. Paul
Fletcher, Marshall H.	Major, MC	Asheville
Foster, Sidney D.	Capt., MC	Toledo, Ohio
Gallagher, Henry J.	1st Lt., MC	Boston
Griffith, Lewis M.	1st Lt., MC	Asheville
Hultgren, Harold H.	2nd Lt., MC	Minneapolis
Hurdle, Sam W.	1st Lt., MC	Winston
Hanes, Frederic M.	Lt. Col., MC	Winston
Hyman, Mose M.	1st Lt., MC	Detroit
Johnson, Charles A.	2ndLt.,QMC	Florida
Lineberger, Henry O.	Capt., DC	Raleigh
Long, John W.	Lt. Col., MC	Greensboro
McCall, Alvin C.	1st Lt., MC	Rocky Mount
McNair, John C.	Capt., MC	Mississippi
Munt, Herbert F.	1st Lt., MC	Boardman
Noble, Harry S.	Capt., MC	St. Marys-Ohio
Northington, James M.	Capt., MC	LaCross Va.
Ogburn, Herbert H.	Capt., MC	Greensboro
Patterson, George K.	Capt., DC	Wilmington
Pritchard, Arthur T.	Capt., MC	Asheville
Robertson, James F.	1st Lt., MC	Wilmington
Shuford, Jacob H.	Capt., MC	Hickory
Stanton, Thomas M.	1st Lt., MC	High Point
Sturgis, Samuel B.	1st Lt., MC	Lenoir
Taylor, Frederick R.	1st Lt., MC	High Point
Warner, Alfred R.	Capt., MC	High Point
Wine, John E.	1st Lt., MC	Wilmington

The Medical Spectator

Dermatological Note

Frozen Zephiran cubes applied to the skin produce quick, painless, superficial anesthesia for minor dermal procedures. An epilating-type electric needle used with this agent "boils the blood in the lumen of the vessels" to assure adequate hemostasis. The author advises that a drop of Parker 51 ink or gentian violet be added to the Zephiran before freezing to deter the office or hospital staff from inadvertently dropping cubes into office party highballs. (Abstract from Zimmerman, M.C., A.M.A. Arch. Dermat. & Syphil. 77:122, 1958)

By the pricking of my thumbs,
Dr. Zimmerman this way comes.
Zephiran cube and vessel bubble,
Bloody boil for dermal trouble.
Rodent ulcer, bite of mite,
In the dermis gnaw and blight,
Tray of ice and shot of Scotch,
Office party and livid blotch,
Parker's ink and crystal dye,
Needle's prick and bally high.
For a touch of dermal trouble,
Zephiran cube for boil and bubble.
Zephiran cube and vessel bubble,
Bloody boil for dermal trouble.

* * *

The Patient Always Talks

Freud in *The Psychopathology of Everyday Life* notes that people say things off hand which are often more revealing than are hours of careful interviewing. Patient's descriptions and observations by members of patients' families are often just as brief and quite as revealing.

Early in my practice, having accepted this psychosomatic gospel, I resolved to treat a husband and wife, the latter being an asthmatic who quite naturally began to have chest aching during her attacks. When I asked the stricken husband about his wife's pain in the chest, he blurted, "The chain in the pest....". I abandoned my therapeutic efforts shortly thereafter.

Neologisms too may be helpful. A recent patient, female and 10 years older than her husband, was admitted for evaluation of complaints probably related to competition with her mother-in-law for her son-husband. In the course of describing the home situation, she reported that it was "sorbid."

And finally the wife of a young schizophrenic reported that her husband talked "in spaces."

* * *

Tobacco, Cancer and Public Morality

In 1950, while still a medical student, Dr. Ernest Wynder was one of the first to reach what might be called the hunting and gathering stage in the evolution of the concept of tobacco as a carcinogen. Earlier Dr. Ochsner had been evangelizing on the same topic, but Dr. Ochsner has usually been stranded, early on his crusades, before reaching Jerusalem.* Since then the air has been filled with charges and counter charges, broadsides by Dr. Clarence Cook Little and Dr. David Rutstein, even reaching the sacrosanct pages of *The Atlantic*. Sigma Xi has sent Dr. E. Cuyler Hammond to tobaccoland on a lecture tour.† Representative Blatnik (D-Minn.) has viewed with the usual alarm both in Congress and in *Harper's*, and the tobacco industry has increased advertising, sales, and profits.

It seems time to clear the haze and accept some obvious points in this matter so that we may forget the hoopla and allow the dispassionate to work out what factor or factors are responsible for a highly significant statistical association. Excising hysteria and erasing fixed notions is not an easy job, but perhaps one may start by accepting two points:

1. There is a highly significant statistical association between cigarette smoking and the bronchogenic carcinoma.

2. People are going to smoke despite these figures, just as people will continue to drive automobiles despite the potential danger of an accident.

At the risk of sounding facetious, the tobacco industry is not the only one which has thrown up a smoke screen. Many of those ready to condemn tobacco look the other way when fallout is mentioned. Even in England, where the anti-tobacconist group seems stronger, atomic tests continue. There has been much talk of a clean bomb, but there seems no denying that our atmospheric radioactivity is increasing. There seems little doubt likewise that ionizing radiation can lead to an increased incidence of malignant disease. We already know that among radiologists the incidence of leukemia is greater than in other medical specialty groups, and we are also aware that the patient with rheumatoid spondylitis treated with ionizing radiation has a greater chance of developing leukemia than a similar patient treated by other methods.

The issue seems to me to be one of personal freedom. Freedom has been redefined as that condition which leaves man free to choose his own doom. If we can accept this definition and subscribe to it, both of the problems referred to above could be approached with a good bit less heat and considerably more light.

* * *

Isolated

Errata: Last month the Medical Spectator was slain by his own polysyllabication, and in a footnote at that. What was submitted as "circumlocution" came off the press as circumlocation. I suppose that this is a good enough term to describe the places a man has been when he has been around.

---

*Dr. Ochsner in turn was preceded by Owen Johnson (creator of "Stoner at Yale," "The Varmint," and "The Prodigious Hickey" around the turn of the century) coined the term "coffin nails" for cigarettes, and by King James, who contributed a vitriolic and rather irrational pamphlet on the subject.

†Hammond, E. C.: Smoking and Death Rates—A Riddle in Cause and Effect, Am. Scientist 46:331-354, 1958.

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APRIL, 1959

NATIONAL HOSPITAL WEEK

The nation's hospitals, through the American Hospital Association, have invited their closest ally, the medical profession, to help them develop greater understanding and appreciation of their services and contributions to the American people.

This year's National Hospital Week, May 10-16, will emphasize the theme of "More Roads to Recovery." An explanation of these "roads"—better care, improved techniques and skills, greater numbers of personnel to apply the dramatic successes of medical science—will help offset a growing myth that hospital costs are greater than the services received.

Such distorted stories not only jeopardize public regard for the hospital but for the entire medical team, including the practicing physician. Consequently, it is to our mutual advantage to work together toward overcoming these detrimental impressions which are gaining some acceptance.

Kits and other working tools, prepared by the American Hospital Association, have been sent by the American Medical Association to the executive secretaries of each state and metropolitan medical society, together with the names of key representatives of state hospital associations and metropolitan hospital councils, so that the medical profession may better coordinate its promotional efforts on behalf of Hospital Week.

Through the use of public forums, tours of hospital facilities, talks to community groups, and radio, television, and newspaper facilities, the story of the unprecedented hospital services now available—resulting in shorter hospital stays, employment of all the medical advances, and healthier and longer lives—can be told convincingly.

"More Roads to Recovery" are the patient's reward for the close harmony and utilizations of the resource of both the hospital personnel and the medical profession. These rewards can be made more meaningful by your participation in National Hospital Week.

Each physician in the community should want to win public support for the hospital in which he practices, and is urged to offer his help to his hospital administrator and to his hospital association in the coming observance. National Hospital Week, May 10-16, offers an exceptional opportunity for creating greater appreciation of the entire medical team.

* * *

MEDICINE—AND BLUE SHIELD—ACCEPT THE CHALLENGE

Seldom—if ever before—has medicine earned such a "friendly press" as greeted the action of the A.M.A. House of Delegates at its Minneapolis meeting in December, when it resolved that "the A.M.A., the constituent and component medical societies, *as well as physicians everywhere*, expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income" . . .

To make such a program possible, the

A.M.A. Delegates realistically urged "that physicians agree to accept a level of compensation for medical services rendered to this group which will permit the development of such insurance and prepayment plans at a reduced premium rate."

Thus, American medicine has forthrightly accepted the challenge of the Forand Bill and acknowledged the special needs of our older citizens, many of whom are getting along on extremely modest retirement incomes.

The national association of Blue Shield Plans has responded promptly to the A.M.A. action. Its staff, under the direction of a special committee, is developing a pattern of coverage, payments and subscription rates that can be used by local Blue Shield Plans in developing their local programs for senior citizens.

Each of us will soon have an opportunity to take part in this great professional enterprise. For it will be up to us, as individual physicians, to make good this A.M.A. pledge. We will be called on for a new and crucial demonstration of the ability of our free profession to meet its collective responsibilities by voluntary action in a free society.

* * *

KREBIOZEN AGAIN

It is not hard to understand why nonmedical people favor the secret "cancer cure," Krebiozen—but virtually impossible for medical men to understand the attitude of such a scientist as Dr. A. C. Ivy. A "Committee for a Free Test of Krebiozen" has been organized to demand that this secret remedy be used blindly, without submitting it to the rigid tests accorded other compounds by responsible clinics or laboratories.

The most cruel part of the controversy is the false hope raised in the minds of the public—whose credulity in medical affairs seems almost unlimited.

The Krebiozen affair brought to the memory of a few medical veterans the infamous "turtle serum" cure for tuberculosis that was brought to this country about 50 years ago by the German, Dr. Friedman. When organized medicine refused to sanction its use until it had been carefully evaluated, the newspapers of the country—especially of New York City—denounced the doctors as being mercenary, provincial, selfish, and merciless for discouraging its use in tuberculous patients. Time has somewhat blurred the picture, but the impression is left that Friedman gave his "turtle serum" to numerous patients, many quite wealthy; sold his "patent" for a million dollars, and sailed back across the Atlantic, leaving behind him a trail of dead and dying victims. The last of the story was not carried in the newspapers but in the medical journals.

The analogy between Krebiozen and the turtle serum is not exact, however; unless memory is deceptive, there was no American scientist to uphold Friedman's claim.

* * *

DYSAUTONOMIA

A recent news release announced that funds are available for research in "familial dysautonomia" from the Dysautonomia Association.

"Dysautonomia" is such a new word that it did not appear in Dorland's dictionary until the twenty-third edition (1957). Probably it is as unfamiliar to our readers who are not pediatricians as it was in the editorial office of the JOURNAL. A pediatrician who was consulted confirmed the Dorland definition of it: "A familial condition characterized by defective lacrimation, skin blotching, emotional instability, motor incoordination, and hyporeflexia." She added that it occurs almost altogether in Jewish people and that no case has been reported from this state. While unbalanced autonomic nervous systems are often found in adults, the dysfunction, fortunately, is not so extreme as in the condition under study by the Dysautonomia Association. It is devoutly to be hoped, however, that the studies in the development of the autonomic nervous system in the severe familial dysautonomia may help to explain the lesser degree of autonomic imbalance seen in later life.

President's Message

COMMERCIAL HEALTH INSURANCE

In a recent memorandum to the members of the Committee on Liaison Organization for Medicine and Insurance, Chairman Frank W. Jones called attention to the geographical distribution of the committee and to the broad representation of the various fields of medicine within the committee. In his report he referred to Health Insurance as one of the most important phases of medical practice in today's organized society; and he pointed out the potential of his Committee to assist the Medical Society, and in turn to be of aid to every practicing physician in North Carolina and to the people of our state.

In emphasizing the long felt need for liaison with the commercial companies, Chairman Jones stated: "I rather think that we have not paid them due attention. Regardless of our feelings about third parties, each and every one of us in our practice lives in one form or another by third party participation. It would seem that the insurance industry and the medical profession have a common interest in the moulding of the manner and shape of future events that may escape from the Pandora's box of socialization. The term 'socialization' is one that has been ridden a bit too hard and perhaps has lost some of its meaning in that any time it is spoken, the first thing that we think of is socialized medicine. Actually what we fear more than anything is total federalization.

"Medicine does not want total federalization; but if anyone is more interested in preventing its occurrence, it is the commercial insurance companies. To them total federalization would mean total destruction. By working with the commercial companies, our Blue Shield-Blue Cross programs, along with the medical profession, may find strong allies. There are mutual grounds where we can solve many problems, iron out difficulties, and establish strong coexistence. In discussing and exploring the dangers of federalization with representatives from the commercial insurance companies, I have many times been reminded of the comment we frequently hear: 'He is a real fellow when you get to know him, but queer as the devil until you do.' This statement certainly holds true when applied to those men whom I have met as representatives of the commercial companies."

The Medical Society's Committee on Liaison Organization for Medicine and Insurance has an important job to do. It needs help. In his communication Dr. Jones requested each member of the committee to "please stop to take a little time to sit down and thoughtfully dictate random remarks about what you think our Committee can do and ought to do. I know you are busy—but we are all busy. If this Committee can produce something worth while, we will have fewer time-consuming problems in the future. Please send me your ideas—they will be used to build an agenda for our next meeting. This committee is yours—every district in the State and every specialty is represented. By your thoughts, your ideas, your participation, and our diligent efforts, individually and collectively, we either can make our work something worth while or we can let our failure be another step toward the federalization of medicine. In closing, may I assure you that we can expect cooperation from commercial insurance companies, because without us and without free medicine they cannot exist."

Your President requests that each member of the State Society consider this plea as a direct request and suggests that he make notes of his thoughts on the problem and send them to Dr. Frank W. Jones, Newton, North Carolina. This report from the Liaison Committee is in keeping with the experiences that the Committee on Negotiations has had with representatives from industry. The findings of both Committees are indicative of the many problems that medicine has in common with industry, commerce, agriculture, labor, and the individuals working within the frame-work of government. When one group becomes enslaved or federalized, all other groups are brought closer to governmental control. Within America there is no real reason for any group to oppose another. Basically, we are all striving for the same rights and privileges and the same way of life. When we gain better insight and understanding of the problems facing our fellow man in this complicated society, we shall be in a

better position to evaluate our responsibilities and to furnish leadership worthy of our profession.

If our doctrines are too rigid, no matter if they are based on tradition and look valid at the moment, there is a danger that we may close our eyes to changes in the external world and fail to make necessary modifications of our principles and policies. If we investigate we shall find that outsiders who appear to be interfering with our way of practice have accepted creeds, philosophies, and panaceas on account of need. Frequently we shall learn that they have not carefully examined these programs; also we shall realize that their acceptance is based not on intellectual evaluation, but on emotional allegiance in a struggle between classes. On these people neither reasoning nor facts will have much effect. We shall have to turn to the leaders of all involved groups for understanding. No matter how badly some of the points may go against us, we must strive, if possible, to turn them to the advantage of the future health of our nation.

In commenting on Clarence Darrow as a cross-examiner, Irving Stone stated: "He would never give up examining until he got some comfort out of it. He worked just as carefully on the Judge as he did on the jury." He quoted Darrow as follows: "The most important thing to do is to make the Judge want to decide things your way. They are human beings moved by the same thing that moves other human beings. The point of Law merely gives the Judge a reason for doing what you have already made him want to do." We must keep Darrow's advice in mind in approaching those with whom we desire to establish liaison. In our dealings we shall come in contact with those who know the outside world better than we, and who can help us understand better their ways and philosophies.

In discussing these common problems we must use logic rather than prejudice. We must not put ourselves in the position of being the opposition. We must remember that our country cannot have a health program without a healthy medical profession, capable of furnishing leadership, alert to the problems and qualified to solve them. In the health problems of our nation we shall either lead or follow—this choice is ours.

LENOX D. BAKER, M.D.

BULLETIN BOARD

COMING MEETINGS

Medical Society of the State of North Carolina—One Hundred Fifth Annual Meeting—Asheville, May 3-6.

State Board of Medical Examiners—Battery Park Hotel, Asheville, May 4 (endorsement of credentials); Sir Walter Hotel, Raleigh, June 15 (written examination); June 16 (endorsement of credentials).

North Carolina Heart Association, Annual Meeting—Sir Walter Hotel, Raleigh, May 21.

Duke University Medical Center, Refresher Course in Anesthesia—Duke University, Durham, May 21-23.

Seaboard Medical Association of Virginia and North Carolina—Carolinian Hotel, Nags Head, June 25-27 .

South Carolina Medical Association, Annual Meeting—Columbia, May 13-14.

American Medical Association, One Hundredth Eighth Annual Meeting—Atlantic City, June 8-12.

Trudeau School of Tuberculosis and Other Pulmonary Diseases—Saranac Lake, New York, June 8-26.

NEW MEMBERS OF THE STATE SOCIETY

The following new members joined the Medical Society of the State of North Carolina during the month of March, 1959.

Dr. Boyd Thomas Worde, Duke Hospital, Durham; Dr. Jessie Lee Cavener, B12 Westover Park Apts, Durham; Dr. Stanley Parker Urquhart, Rt. 4, Box 62, Burnsville. Dr. John Wilson Morley, N. C. Sanatorium, McCain; Dr. William Lawson Williams, Jr., Mercy Hospital, Charlotte; Dr. William Alexander Davis, Jr., Cornelius; Dr. Archie DuVall Walker, Jr., 305 N. Broad St., Edenton; Dr. Donald Kernodle, 316 Graham-Hopedale Rd., Burlington; Dr. Robert Edwin Gaddy, Jr., Box 2738, Duke Hospital, Durham.

Dr. Allen Lamar Harrell, 221 N. Oak St., Statesville; Dr. John Prichard Spargo, Duke Street, Cooleemee; Dr. John Alexander Lusk, III, 1018 N. Elm St., Greensboro; Dr. John Goodwin Craddock, Jr., Carolina General Hospital, Wilson; Dr. Robert Lee Tomlinson, Jr., Carolina General Hospital, Wilson; Dr. Robert Day Richards, Rt. 2, Wilson; Dr. Harold Cranford, 23 W. Third St., Lexington; Dr. Clayton J. Jones, Ardsley Road, Concord; Dr. Thomas G. Gibson, Jr., Box 54, Gibson.

NEWS NOTES FROM THE DUKE UNIVERSITY SCHOOL OF MEDICINE

A refresher course in anesthesia will be held at the Duke University Medical Center, May 21-23.

Designed for physicians interested in anesthesia, the course will be given by the Duke anesthesiology division as part of the Medical Cen-

ter's program of postgraduate education.

The three-day course will include lectures and demonstrations, case report studies, film presentations and anesthetic clinics at Duke and the Veterans Administration Hospital here. Course participants will be guests of the Medical Center at an informal dinner on May 22.

The 12-member faculty for the course will be composed of Duke Medical Center doctors and guest lecturers from the University of North Carolina School of Medicine, Bowman Gray School of Medicine, Veterans Administration Hospital here and Albert Einstein College of Medicine.

Information about the course may be obtained by writing to Dr. William M. Nicholson, Director of Postgraduate Education, Duke University Medical Center, Durham, North Carolina.

* * *

A Duke University Medical Center faculty member has been named psychiatry department chairman for the University of Kentucky's new medical center in Lexington, Kentucky.

Dr. Joseph B. Parker, Jr. will head the department and also will be professor of psychiatry. He will assume his new duties late next summer.

Dr. Parker is associate professor of psychiatry at Duke and chief of psychiatric service at the Veterans Administration Hospital here.

* * *

Duke University medical scientists have received the go-ahead signal for a major stepping up of research that may ultimately lead to the cure or leukemia and other forms of cancer.

The increased tempo is being made possible through funds totaling $1.5 million which have been allotted to Duke by the U. S. Public Health Service for a concentrated attack on these diseases.

The money will finance expanded work during an eight-year period in what is now considered the most promising area of cancer research: the study of viruses as a possible cause of leukemia, Hodgkin's disease, and related types of cancer.

Dr. Joseph W. Beard, is head of the project and also head of the Duke Medical Center's laboratory for study of viruses as related to cancer which is the largest of its kind anywhere in the world in terms of personnel, facilities and scope of research.

The eight-year grant represents a departure from previous Public Health Service policy, he noted, because "it was given for a comparatively long period to enable us to pursue the problem as we see fit." Usually such grants are made on a year-by-year basis to finance specifically outlined projects.

* * *

How many days in a year?

At the Duke University Medical Center, the answer is 164,724—the total number of days of patient care rendered by Duke Hospital over the past year.

Patients from 99 of North Carolina's 100 counties were hospitalized at Duke during the period, according to a service report released recently by the hospital. Other patients came from 36 states and a number of foreign countries.

The total number of hospitalized patients at Duke during the year topped 19,000. Also, the hospital handled 113,640 emergency cases and outpatient visits by persons not requiring hospitalization.

Duke Hospital, now the second largest private general hospital in the Southeast, has 630 beds and 30 bassinets. The hospital staff numbers more than 350 physicians and 1,300 other employees.

* * *

H. D. Maynard Jr. has been named an assistant director of Duke Hospital's Out-Patient Department, according to an announcement by Hospital Superintendent Charles H. Frenzel.

The appointment is effective April 1. One of two assistant directors, Maynard will be responsible primarily for business management of the surgical division of the Out-Patient Department.

News Notes from the Bowman Gray School of Medicine of Wake Forest College

Winners of the second eight Reynolds Scholarships for study at Bowman Gray School of Medicine have been announced by Dr. C. C. Carpenter, executive dean.

The scholarships, provided by the Z. Smith Reynolds Foundation, are adequate to cover the cost of a medical education, including four years in medical school and two years of postgraduate training.

The scholarships have been described as the "most generous in medical education today." Benefits range from $2,400 to $4,800 a year.

The recipients and the colleges where they are doing pre-medical work are:

Carole Jean Stoessel of Salisbury, Catawba College; Robert W. Carter of Selma, University of North Carolina; Herman Allen Godwin, Jr. of Dunn, University of North Carolina; James T. Hodges of Cullowhee, Western North Carolina College; Wade H. Lefler, Jr. of Newton, University of North Carolina; Frederick B. Weaver of Salisbury, Catawba College; J. Curtis Williams of Lexington, Wake Forest College; and Frances Marion Youngblood of Wilmington, Wake Forest College.

Reynolds Scholars are chosen by the Committee on Admissions from residents of North Carolina who are admitted to the next entering class at Bowman Gray. Selection is based on character, scholarship, potential as a physician, and financial needs.

The recipients must have the intention to practice in North Carolina for at least five years after completing their medical education.

This is the second year the scholarships have been awarded. The first eight Reynolds Scholars

will complete the freshman year in June. The new group will enroll in September.

* * *

Dr. William H. Boyce, associate professor of urology at Bowman Gray, participated on the program of the American Urological Association meeting March 29-April 3 at Louisville, Kentucky.

Dr. Boyce was a guest speaker at a symposium on "Urinary Tract Infections." He was also chairman of the section on scientific exhibits.

Dr. Fred Garvey, professor of urology, attended the meeting also.

Dean Wilburt C. Davison of Duke University School of Medicine spoke April 6 at Bowman Gray under the sponsorship of the Frederick R. Taylor History of Medicine Society. Dean Davison reminisced on the life and work of Sir William Osler, under whom he studied.

* * *

Approximately 35 representatives of Region I of the Student American Medical Association met at Bowman Gray March 21 for a day-long business session.

The region embraces all medical schools in Virginia, North and South Carolina, Georgia, Alabama, Florida and Puerto Rico.

The program included morning and afternoon business sessions, a tour of Bowman Gray's new research building, and a barbecue and square dance for delegates and Bowman Gray students.

The principal business was discussion of resolutions to be presented at the national SAMA convention at Chicago April 30. The group decided to make another effort to bring next year's convention to the South—a long-standing goal of Region I.

Region president Earl W. Hathcock, Jr. of the Medical College of Georgia presided. National president Carwile LeRoy of the University of North Carolina School of Medicine reported on national headquarters activities.

* * *

Dr. Richard L. Burt, associate professor of obstetrics and gynecology at Bowman Gray, presented a paper at a meeting of the Society for Gynecologic Investigation April 4 and 5 at Atlantic City, New Jersey.

The paper was entitled "Carbohydrate Metabolism in Pregnancy Following Insulin Administration."

* * *

Three Bowman Gray faculty members presented a paper at the national meeting of the American College of Physicians April 20-24 at Chicago. They were Dr. John Felts, instructor in internal medicine; Dr. Archie Carmichael, assistant in internal medicine; and Dr. Damon Blake, instructor in radiology.

The paper was titled "Intrathoracic Manifestations of Malignant Lymphomatous Disease."

* * *

Dr. Eben Alexander, Jr., professor of neurosurgery at Bowman Gray School of Medicine and chief of professional services at Baptist Hospital, has been re-elected president of the United Medical Research Foundation of North Carolina.

Bowman Gray, Duke University School of Medicine, and the University of North Carolina School of Medicine have received $53,000 each from the foundation since it was founded four years ago.

* * *

Nearly 80 physicians participated in the first annual House Staff Alumni Day April 3 at Bowman Gray School of Medicine and Baptist Hospital. Following a day of scientific sessions at the hosptial, they were joined by their wives at a reception, buffet dinner, and dance.

The morning was devoted to departmental programs in each specialty and a clinic.

Dr. Ellard Yow, professor of medicine at Baylor University College of Medicine, a Bowman Gray graduate and former resident at Baptist Hospital, was the principal speaker at the general session. He discussed "Observations on a New Clinical Syndrome—Farmer's Lung."

Residents presenting papers were Dr. William Hunt and Dr. Carl Tattory, "Cytological Studies in the Early Detection of Gastric Malignancy"; Dr. Nicholas Sacrinty, "GI Bleading"; and Dr. Robert Crouch, "Abdominal Aortic Aneurysm."

The welcome was by Dean C. C. Carpenter and Dr. Eben Alexander, chief of professional services.

* * *

Bowman Gray Chapter of the Student American Medical Association has elected the following officers for the 1959-60 academic year:

George Armstrong of Mount Gilead, president; Samuel T. Bickley of Jonesboro, Tennessee, vice president; Miss Caryl Guth of Elkin, secretary; Frank W. Farrell, Jr. of Lillington, treasurer; and Charles W. Hebert of Asheville, assistant editor (editor-elect) of the **Journal of the Bowman Gray School of Medicine.**

* * *

Dr. Robert Grant, Chief of the Section on Cardiodynamics, National Institutes of Health, spoke April 13 at Bowman Gray School of Medicine on the topic "Quantitative Morphology—A New Look at Cardiac Pathology."

Dr. Joseph C. Aub, professor of research medicine emeritos, Harvard School, was scheduled to deliver the Nathalie Gray Bernard Lectures April 30 and May 1 at Bowman Gray. His topics were "Cancer and Normal Cell Growth" and "Our Present Study of Cancer Growth."

* * *

Three papers and a movie were presented by Bowman Gray faculty members at the Federation of American Societies for Experimental Biology at Atlantic City, April 13-17. They were:

Dr. Merrill Spencer, assistant professor of physiology and pharmacology, a film, "Measurement

of Blood Flow in Experimental Animals by Means of Implanted Electromagnetic Probes."

Dr. Harold Green, professor of physiology and pharmacology, with Drs. Adam Denison and Carlos Rapela, "Computer Technic for Indicator Determination of Mean Vascular Transit Time."

Drs. Green and Rapela, "Duration of Blockade by Dibozane, Ilidan, and Dibenzyline—Some Aspects of Coronary Blood Flow."

Dr. Carmilo Artom, professor of biochemistry, "Oxidation of Fatty Acids in Liver Preparations from Rats Receiving DL-ethionine."

News Notes from the University of North Carolina School of Medicine

For the seventh time a member of the faculty of the University of North Carolina School of Medicine has been named a Markle Scholar in Medical Science.

Dr. W. Reece Berryhill, Dean of the School, was notified recently that Dr. Robert Zeppa, Instructor in Thoracic Surgery of the Department of Surgery, had been named a Markle Scholar.

Dr. Zeppa is the first scholar appointed in the UNC Department of Surgery. Three have been appointed in the Department of Medicine, two in the Department of Pathology and one in the Department of Pediatrics.

* * *

A seminar on Physical Therapy Education and Current Programs Contributing to North Carolina's Health was held at the University of North Carolina School of Medicine Friday and Saturday, March 20-21.

Some 50 physical therapists from throughout the state attended the two-day program. The seminar was sponsored by the Section of Physical Therapy of the UNC Medical School.

* * *

Dr. Charles H. Burnett, professor and head of the Department of Medicine, left recently for a seven-week lecture and study tour of medical centers in Puerto Rico and five South American countries. He is visiting Columbia, Peru, Chile, Argentine and Brazil, and is accompanied by his wife. The tour is being sponsored by the Rockefeller Foundation.

The tour is related to the $250,000 program of general development for the Department of Medicine announced last year. The funds for this development program are also being granted by the Rockefeller Foundation and will cover a five-year period.

With the aid of last year's grant, the Department of Medicine has an opportunity to extend its educational services through cooperation with foreign medical centers, especially those of the South American countries.

* * *

Dr. John T. Sessions, associate professor of medicine, took part in the twelfth annual Stoneburner Lecture Series and Symposium on Gastroenterology at the Medical College of Virginia in Richmond as a guest lecturer.

* * *

Dr. Warner Wells of the Department of Surgery, University of North Carolina School of Medicine, spoke recently at the University of Michigan on Japan and the Japanese people.

Dr. Wells is editor and translator of the recent best seller, "Hiroshima Diary." Following World War II, Dr. Wells spent three years in Japan as a member of the U. S. Atomic Bomb Casualty Commission. At this time he made a study of the long-range medical effects of atomic bombing.

* * *

Six papers were recently presented by personnel of the Department of Psychiatry at the American Psychiatric Association Regional Research Conference in Little Rock, Arkansas.

Dr. George Bernard presented "Epileptogenic Effects of Promazine Hydrochloride." "Attitudes of Auxiliary Personnel Administering Electroconvulsive and Insulin Coma Treatment" was given by Dr. J. T. Monroe and Dr. W. C. Ruffin. All three physicians are members of the house staff of the Department of Psychiatry.

Four papers were presented by students of the School of Medicine. The students and the title of their papers were C. R. O'Briant, "The Process of Socialization into the Patient's Role"; Norman Desrosiers, "Goal-Limited Psychotherapy"; C. R. Trado, "An Evaluation of Non-verbal Communication in Psychotherapy and in Psychiatric Interviewing" and J. D. Bulla, "Further Studies in Meprobamate Habituation."

* * *

Dr. Hans H. Strupp, director of Psychological Services at the North Carolina Memorial Hospital, presented a paper, "Some Comments on the Therapist Variable in Psychotherapy Research," at a workshop on the evaluation of the effectiveness of psychotherapy at the annual meeting of the American Orthopsychiatric Association in San Francisco March 29-April 1.

* * *

Dogs that lead a man's life—the story of canine homophilia—was discussed by Dr. John B. Graham, professor of pathology, at the University of Michigan Monday, March 23.

* * *

Dr. Ernest H. Wood, trustee of the American Board of Radiology, attended a special meeting of the Board in Cincinnati, Ohio, on March 15, prior to his participation in Board examinations of physicians seeking certification in the specialty of radiology, during the following three days. Also during the week of March 23, Dr. Wood was a guest faculty member for a postgraduate course in neuroradiology, given at the Columbia Presby-

terian Medical Center in New York City. This program was one of several given to commemorate the fiftieth anniversary of the foundling of the Neurological Institute of New York.

* * *

Dr. Robert A. Ross, professor and chairman of the Department of Obstetrics and Gynecology, was installed as President of the Tri-State Medical Society at a meeting in Winston-Salem, N. C. on March 17. He also served as a Visiting Professor at a postgraduate course for general practitioners of the Iowa Academy of General Practice. His topics were "Threatened Abortion" and Ectopic Pregnancy." The meeting was held in Iowa City, Iowa.

* * *

Dr. Melvin Sabshin, assistant director of the Institute for Psychosomatic and Psychiatric Research and Training at Michael Reese Hospital, Chicago, visited the Department of Psychiatry of the UNC Medical School recently. He participated in various teaching sessions within the Department and addressed the Thursday Afternoon Staff Conference on "Nurse-Doctor-Patient Relationships."

* * *

Dr. D. Wilfred Abse, professor of psychiatry, was guest speaker at the Second Annual Psychiatric Symposium of the Bradley Center, Inc., in Columbus, Georgia, on March 13-14. Dr. Abse spoke on "Principal Types of Psychotherapy and Indications for Their Usage."

* * *

A new addition to the pediatric section of North Carolina Memorial Hospital at the University of North Carolina was dedicated on March 14 in memory of Robbie Page, a six year old boy who died at Boston from polio in 1950.

The project, started last fall, was completed at a cost of $55,000. Of this sum, $28,000 was furnished by the Sigma Sigma Sigma Sorority and $27,000 came from the N. C. Medical Care Commission. The sorority is a national social sorority and a member of the Pan Hellenic Council.

Mrs. Robertson Page was president of the sorority in 1950, the same year her son, Robbie, began school. After his first day at school, Robbie came home and complained of illness. He died soon afterwards in the Children's Medical Center in Boston.

The sorority then created the Robbie Page Memorial Fund. In the past this fund has been used for the support of the U.N.C. Department of Pediatrics, the March of Dimes and other projects dealing with the diseases of children.

The sorority not only has financed over half the new structure, but also has pledged continuing support to N. C. Memorial Hospital and the U.N.C. Department of Pediatrics.

The building project has consisted of enclosing some 2,000 feet of floor space that was formerly an open terrace on the hospital's seventh floor. The newly enclosed space will be used primarily as a play area for the children; it also contains an office and a conference room.

Those taking part in the dedication ceremonies were Mr. and Mrs. Robertson Page, Robbie's parents; Susannah Page, his sister; Mrs. H. W. Morrison, National Chairman of the Robbie Page Memorial Fund; Dr. E. C. Curnen, Professor and Chairman of the U.N.C. Department of Pediatrics; Mrs. Curtis C. Dixon, President of the National Sorority; U.N.C. Chancellor William B. Aycock and the Rev. Charles M. Jones.

North Carolina Heart Association, Inc.

The Scientific Sessions of the North Carolina Heart Association Annual Meeting will be held Thursday, May 21 at the Hotel Sir Walter in Raleigh. All physicians are invited to attend. The program is set as follows:

9:00 a.m.—Registration

10:00 a.m.—Dr. Irvine Page of Cleveland

10:45 a.m.—Dr. Charles Hufnagel of Washington

11:30 a.m.—Panel on cerebral vascular disease with Dr. Page, Dr. Hufnagel, and Dr. Bruce Logue of Atlanta; Dr. Eugene Stead of Duke as moderator
Dr. Ernest Page of Raleigh will preside over the morning session.

12:30 p.m.-2:00 p.m.—Annual Meeting Luncheon, with Dr. Irvine Page as guest speaker

2:15 p.m.-3:15 p.m.—Dr. Bruce Logue on "Occult Signs and Symptoms of Congestive Heart Failure"

3:15 p.m.-4:30 p.m.—Clinical-Pathological Conference, with Dr. Ernest Craige of UNC as clinician, Dr. Robert Prichard of Bowman Gray as pathologist, and Dr. Tom Worth of Rex Hospital as radiologist.
Dr. A. J. Crutchfield of Winston-Salem will lead the afternoon session.

North Carolina Kidney Disease Foundation

The North Carolina Kidney Disease Foundation for nephritis, nephrosis, and allied kidney diseases is accepting applications for research grants from investigators in North Carolina. Applications, which may be obtained from the Medical Advisory Board of the chapter, must be completed and sent to the Board on or before June 1, 1959. Applications will be considered every 6 months,—the "deadlines" being December 1 and June 1 of each year.

The grants will be made to support both basic and applied research in the field of nephrosis, nephritis and allied kidney disorders. They are designed to help investigators test new ideas, to

provide needed equipment or to assist in established research programs. For the present, only applications for less than $1000 will be considered.

For further information and application blanks, address all inquiries to Jerome S. Harris, M.D., Chairman, Medical Advisory Board, Duke Hospital, Durham, North Carolina.

Edgecombe-Nash Medical Society

The Edgecombe-Nash Medical Society met in Rocky Mount on April 8.

The speaker for the evening was Dr. Ivan W. Brown, Jr., associate professor of surgery at Duke University Hospital. His topic was "Recent Advances in Cardio-Vascular Surgery with Comments on Present Medical and Surgical Treatment Behind the Iron Curtain."

Robeson County Medical Society

The Robeson County Medical Society held its monthly meeting on March 11, 1959, at the Pine Crest Country Club, Lumberton, North Carolina. This was the fifth annual Heart Symposium sponsored by the Robeson County Medical Society and the Robeson County Heart Committee of the North Carolina Association. Sixty-six doctors from Robeson and surrounding counties attended this fine meeting.

Guest speakers included General Thomas Mattingly, retired director of Medical Education, The Washington Hospital Center, Washington, D. C.; and Dr. Glenn Sawyer and Dr. Ernest Yount of the Department of Medicine, Bowman Gray School of Medicine, Winston-Salem, North Carolina.

The application for membership into the society of Dr. Morris Kramer, radiologist at the Robeson County Memorial Hospital, Lumberton, North Carolina, was unanimously accepted.

Southern Regional Education Board

Dr. Eugene A. Hargrove, General Superintendent of the North Carolina Hospitals Board of Control, has been appointed by Governor Luther H. Hodges to the Southern Regional Council on Mental Health Training and Research of the Southern Regional Education Board. Dr. Hargrove is replacing Dr. Myron G. Sandifer, Jr. of the University of North Carolina Department of Psychiatry, who resigned from the Council recently.

Oregon Cancer Conference

An Oregon Cancer Conference is being held July 16 and 17, 1959 in Portland under the joint sponsorship of the Oregon State Medical Society, the Oregon Division of the American Cancer Society, the University of Oregon Medical School and the Oregon Academy of General Practice. The Conference is planned for midsummer as a special feature of the Oregon Centennial celebration.

A copy of the complete program and hotel reservation forms may be obtained by writing to Roscoe K. Miller, Executive Secretary, Oregon State Medical Society, 1115 S. W. Taylor Street, Portland 5, Oregon.

International College of Surgeons

The International College of Surgeons has announced that it will hold its fourth around-the-world postgraduate refresher clinic tour in the late Fall. Dr. Edward L. Compere of Chicago, president of the United States Section, I.C.S., will be the coordinator of medical activities.

Departure will be by plane from San Francisco, October 10. The tour participants will take in specially arranged meetings of I.C.S. Sections in Tokyo, October 18-19; Hong Kong, October 29-30; Bangkok, November 2; Tel Aviv, November 20; Istanbul, November 24, and Athens, November 27.

For further information, write to the Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, or to the International Travel Service, Inc., 119 South State Street, Chicago 3.

National Education Association

Some $13,500 in awards—double the amount given last year—will be offered to the nation's science teachers this year in the expanded Science Teacher Achievement Recognition (STAR) awards program, its was announced recently by the National Science Teachers Association. NSTA, a department of the National Education Association, is sponsor of the program.

The awards, conducted under a grant from the National Cancer Institute of the National Institutes of Health, are designed to improve the teaching of science and in turn create the bonus effect of interesting students in the study of scientific subjects. STAR '60 is encouraging collaboration of science teachers and practicing scientists in the development of joint teacher-scientist as well as individual teach entries.

The competition is open to all science teachers in public and non-public school and will close December 15, 1959. Science teachers wishing further information and entry blanks can write to NSTA headquarters, 1201 Sixteenth Street, N. W., Washington 6, D.C.

Blue Shield Medical Care Plans

American medicine's partnership with Blue Shield in extending the benefits of prepaid medical care was the theme of the Annual Blue Shield National Professional Relations Conference held in Chicago, February 9-11.

The conference brought together a record total of more than 300 people, half of whom were physician trustees representing Blue Shield Plan governing boards and officers of 20 state medical

Doctors are generally agreed that the best hope of saving lives from cancer is early detection and prompt, proper treatment. Great progress has been made in the last ten years: the saving now of 1 in 3 compared with 1 in 4, as more and more people are seeing their doctors **in time.**

But with present knowledge and existing facilities, it is possible **today** to save **1 in 2** cancer patients. This is the target of the American Cancer Society's professional and public education programs.

The Society offers doctors a variety of free services: **Literature:** two bi-monthly magazines; **Films:** 200 available on loan, including a series of kinescope films covering practically every clinical phase of cancer; **Slides:** (In color) Characteristic early lesions in sites of greatest incidence; **Exhibits:** for medical meetings and conventions, on special aspects of diagnostic and therapeutic problems.

In its public education program, the Society uses every effective communication medium to urge people to have annual health checkups and to go to their doctors promptly at the appearance of a danger signal.

The challenge will be met. As more and more doctors' offices become "cancer detection centers," and as more and more people see their physicians regularly, the closer will come the day when half of our cancer patients will be saved. The know-how for saving the remaining half is still being sought in our research laboratories. Ultimately that challenge, too, will be met.

AMERICAN CANCER SOCIETY

societies. The executive secretaries of some 25 state and county societies and 130 Blue Shield Professional Relations personnel comprised the balance of the conference group.

In a keynote address, Dr. Louis M. Orr, of Orlando, Florida, President-Elect of the American Medical Association, commended Blue Shield for its "magnificent role" in developing the medical prepayment program, and urged "all members of the health team" to "recapture the pioneering spirit which was the foundation on which Blue Cross and Blue Shield were built."

The following North Carolinians attended the conference: from the State Medical Society, President Lenox D. Baker, President-Elect John Reece, and Secretary James T. Barnes; from Hospital Saving Association, Physician Relations Director K. G. Beeston and Blue Shield Committee Chairman Jacob H. Shuford.

VETERANS ADMINISTRATION

The Veterans Administration announced today it is undertaking in its hospitals a strict program of preventive measures against hospital infections, including those from drug-resistant staphylococcus.

Dr. Irvin J. Cohen, VA assistant chief medical director for planning in Washington, D. C., said the new program is a precautionary move based largely on recent findings of a six-hospital VA study that has been under way for about 18 months to prevent hospital infections. He emphasized that there has been no serious outbreak of this sort of infection in VA hospitals.

Each VA hospital will establish its own infection committee with representation from all major hospital departments, including administrative, all clinical, nursing, housekeeping, and laboratory.

The committees will develop and monitor standards of "scrub and sterilize" cleanliness for the entire hospital and will make frequent checks to spot any rise in infection before an outbreak can occur. Periodic reports will be submitted to VA area and Central Office authorities.

Consultants for the study are Dr. Maxwell Finland of Harvard Medical School in Boston, Dr. J. Vernon Knight of Vanderbilt University in Nashville, Tenn., and Dr. D. Hugh Starkey, advisor for laboratory services to the director of Queen Mary Veterans Hospital in Montreal, Canada.

* * *

The Veterans Administration's top award, the Exceptional Service Award, has been presented to Dr. John B. Barnwell, the agency's chief of medical research and education, by Administrator of Veterans Affairs Sumner G. Whittier.

Dr. Barnwell was cited for his part in organization of the VA-Armed Forces cooperative study of the chemotherapy of tuberculosis, and for his leadership as VA assistant chief medical director for research and education.

BOOK REVIEWS

FRACTURE SURGERY: A Textbook of Common Fractures. By Henry Milch, M.D., F.A.C.S. and Robert Austin Milch, M.D. 459 pages. Price, $17.50. New York: Paul B. Hoeber, Inc., 1959.

The title of this book is somewhat misleading, since very little detail of the actual open surgical treatment of fractures is given. The subtitle, "A Textbook of Common Fractures," is more suitable since the text is devoted primarily to the usual methods of closed fracture treatment.

The first section of this work covers briefly, but very well for this type volume, the common injuries of nerves, blood vessels, tendons and skin that occur in association with fractures. Other subjects, frequently ignored in such a text—for example, techniques of plaster, methods of traction, and regional anesthesia—are well covered. the illustrations in this section are excellent.

The last three-fourths of the book deals with the diagnosis and treatment of specific fractures. The conservative approach to these problems by the authors is to be commended. In some areas, however, a little more space could have been given to the details of the more commonly needed surgical procedures. For the neophyte, or one who treats fractures only occasionally, it would be helpful if more illustrative roentgenograms showing acceptable and unacceptable reductions of the more common fractures were included.

In the preface the authors state that this work "has been prepared in an attempt to bridge the gap between the small handbook of fracture management and the encyclopedic volume encompassing material primarily of interest to the specialist." This purpose is served adequately by this well prepared text; and the way in which information is made readily available. The book would certainly be of value to the student, house officer, and the surgeon who occasionally treats injuries.

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In Memoriam

Dr. Thomas Vassey

WHEREAS, our Maker, in His omnipotent, infinite wisdom has seen fit to remove Dr. Thomas Vassey of Trenton, North Carolina from our midst, and WHEREAS, he will be greatly missed by his family, his numerous patients, and the Lenoir-Greene-Jones Medical Society, and WHEREAS, he was greatly admired for his patience and willingness to help people with his professional services,

Be It Resolved, that the Lenoir-Greene-Jones Medical Society regrets the passing of Dr. Vassey, and that the Medical Society keep a copy of this resolution in its permanent file and send a copy to the family of Dr. Vassey, and one to the Medical Journal of the State Medical Society.

Signed: LENOIR-GREENE-JONES MEDICAL SOCIETY
COMMITTEE: Dr. L. E. Williams
Dr. Oscar Cranz
Dr. Rose Pully
Dr. R. J. Jones

CHAUNCEY D. LEAKE APPOINTED CONSULTING EDITOR OF GERIATRICS

Chauncey D. Leake, Ph.D. assistant dean of the School of Medicine and professor of pharmacology at Ohio State University, has been appointed Consulting Editor of **Geriatrics**, national medical publication devoted to problems of aging. Announcement was made by Dr. Walter C. Alvarez, editor.

Dr. Leake had been associate editor in pharmacology for **Geriatrics** since inception of the journal in 1946. In his new capacity he will seek out and evaluate advances in geriatric medicine and coordinate the editorial efforts of the journal, Dr. Alvarez said.

U. S. Department of Health, Education, and Welfare

The Public Health Service has reported on the status of its Special Traineeship Program in neurological and sensory disorders and called attention to additional opportunities for advanced study and research training.

The Special Traineeship Program is under the direction of the National Institute of Neurological Diseases and Blindness, one of the seven institutes of the National Institutes of Health.

Requests for complete information about the Special Traineeship Program and application forms should be addressed to Chief of Extramural Programs, National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda 14, Maryland.

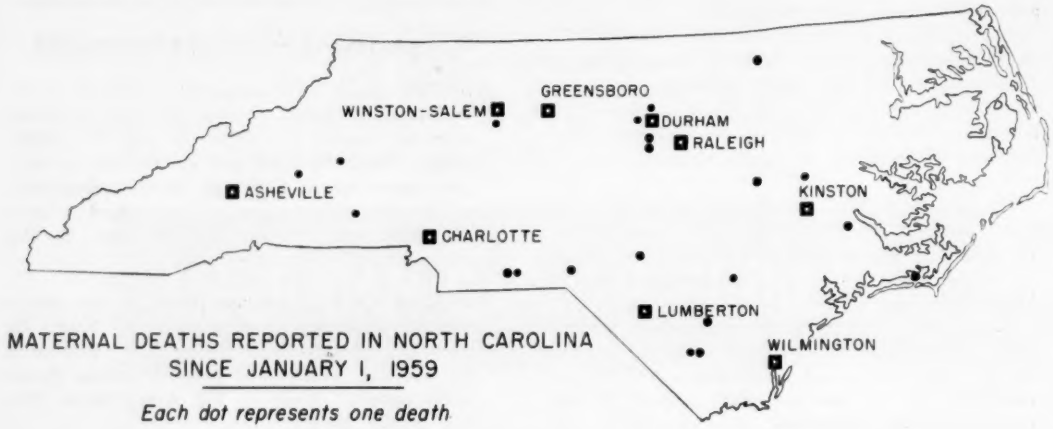
NEW RADIOLOGY JOURNAL PUBLISHED BY WINTHROP

First issue of a new journal dealing exclusively with the field of radiology has been published by Winthrop Laboratories, pharmaceutical manufacturer.

Slated to appear monthly, it is being distributed free to radiologists throughout the country. Purpose of the publication, which is called "Radiology Reporter," is to summarize interesting and signficant data presented at meetings of radiology societies. These digest reports will reach the nation's radiologists in advance of publication of the full texts in the medical literature, it is pointed out by Winthrop.

Accompanying the first issue is a looseleaf binder. The journal is perforated so as to be inserted in the binder for future reference.

Volume 1, number 1 of the new journal is devoted to the Chicago meeting of the Radiological Society of North America.



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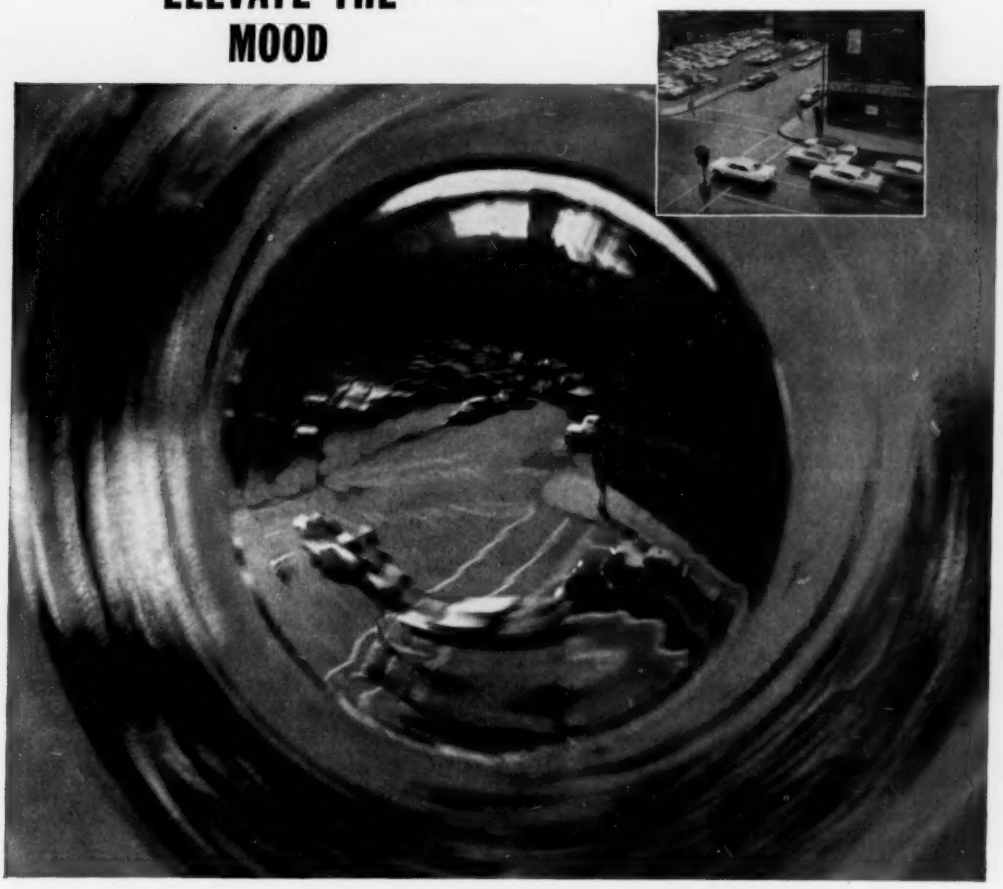

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*Pratt, R. T. C., and McKenzie, W.: Anxiety States Following Vestibular Disorders, Lancet *2*:347 (Aug. 16) 1958.

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SPONTIN IN SERIOUS

A Special Report from Abbott to the Medical Profession on a Year's Clinical Experience with SPONTIN®

(Ristocetin, Abbott)

In a Spanish province, a patient lay dying of endocarditis. A short wave radio appeal for SPONTIN was intercepted by a Baltimore physician. The antibiotic was immediately flown to this faraway land, and 10 days later—the patient had recovered.

In Chicago, a moribund patient had been administered 18 combinations of 10 different antibiotics without success. Involved was a hospital-acquired staphylococcal pneumonia—plus complications. SPONTIN was substituted and the patient lived.

A five-week-old infant was critically ill with staphylococcal enteritis. Treatment failures included erythromycin and chloramphenicol. Three days of SPONTIN saved this life. The list is long and impressive and it grows daily.

Recently, a study[1] was made of serious and resistant staphylococcal infections reported to Abbott Laboratories. Many of these cases had serious complicating diseases—many were moribund, or almost so, at the time SPONTIN was started. Yet, out of the 160 staphylococcal cases studied, 93 were reported cured and 38 improved after the administration of SPONTIN.

Out of the total of 251 patients with severe infections caused by gram-positive or mixed organisms, 149 were reported cured and 53 others improved. And the record for pediatric practice was every bit as good.

Additionally, SPONTIN continues to exhibit exceptional bactericidal activity against coccal infections[2]. And, according to another study, SPONTIN provides successful short-term therapy in endocarditis[3].

Only last October, at the Antibiotics Symposium in Washington, D. C., a panel of six leading antibiotic experts placed SPONTIN at the top of all other commercially-available antibiotics for treating serious staphylococcal infections. Also, six papers—all dealing with the effectiveness of ristocetin (SPONTIN®) in treating staphylococcal infections—were presented at the Symposium.

One of the most encouraging aspects of the year's literature on SPONTIN is the increasing testimony to its safety. As the months have passed and cases have accumulated by the hundreds, it has become apparent that careful attention to dosage recommendations has practically eliminated toxicity and side effects as serious obstacles to therapy. Also, recent improvements have been made in the manufacture of SPONTIN; the drug is now made from pure crystals.

A recent report[4] in the Journal of the American Medical Association concluded, "It is our opinion that, if proper precautions are observed, ristocetin is a [well tolerated] and potent agent to employ in the treatment of staphylococcal infections." And in another study, after successfully treating 28 patients with a variety of staphylococcal infections, the authors reported[5], "No serious complications were noted."

Few more dramatic records have been written in such a short space of time. SPONTIN has proved itself to be a good answer, perhaps the best answer at present, to the resistant staphylococcal problem—and of real value in other serious coccal infections. It may well be your answer when you're confronted with a serious infection.

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STAPHYLOCOCCAL INFECTIONS

Excerpts from Reports Read at the Antibiotics Symposium

Spontin In Treating Severe Respiratory Infections —"In 13 of 20 patients the results were excellent, with clinical response being evident within one to four days after institution of therapy. In three additional patients, there was some degree of improvement in pneumonic processes superimposed on tuberculosis in two cases and on pulmonary neoplasm in one. In all other cases, serious antecedent pathology undoubtedly influenced the negative or equivocal response to ristocetin therapy.[6]"

Spontin In Treating Staphylococcal Infections—After successfully treating 28 patients, the authors wrote, "Ristocetin or Spontin has proved to be bactericidal and bacteriostatic, particularly for the *Staphylococcus aureus,* which is often resistant to many other antibiotics.[5]"

Spontin In Treating Seven Difficult Cases – "Ristocetin has produced excellent results in eradicating, mitigating or preventing infection in seven selected difficult cases. Six of the seven cases involved *Staphylococcus aureus* which did not respond to chemotherapy with other antibiotics.[7]"

Spontin Blood Levels In Children – "Ristocetin was administered as a single intravenous injection of 12.5 milligrams per kilogram. This resulted in serum levels ranging from 1.3 to 10.6 mcg. after two hours with a gradual fall to a level of 0.7 mcg. per cubic centimeter or less after 12 hours.[8]"

Spontin In Treating Staphylococcal Pneumonia —"Ristocetin was used in the treatment of 24 patients with staphylococcal pneumonia, 17 of whom had failed to respond to previously administered antibiotics. Complete clearing of pneumonitis was obtained in 16 patients and significant improvement occurred in two others. Two patients died of pneumonia; four others succumbed to other lethal diseases.[9]"

Spontin In Treating Children and Adults – "Ristocetin completely controlled severe staphylococcal infections in 11 adults and six children who received adequate therapy.[10]"

1. Totals represent published reports and personal communications to Abbott Laboratories.
2. Sixth Annual Symposium on Antibiotics, Washington, D. C., Oct. 15, 16, 17, 1958.
3. Romansky, M. J., and Holmes, R., Successful Short-Term Therapy of Enterococcal and Staphylococcal Endocarditis with Ristocetin—Seven Patients. Preliminary Report, Antibiotics Annual, 1957-58, p. 187.
4. J. A. M. A., 167:1584, July 26, 1958.
5. Bush, L. F., et al., The Use of Ristocetin (Spontin) in Staphylococcal Infections, In Press, Antibiotics Annual, 1958-59.
6. Billow, F. J., et al., Clinical Observations on Ristocetin—A Preliminary Report on its Efficacy and Toxicity in 20 Unselected Severe Respiratory Infections, In Press, Antibiotics Annual, 1958-59.
7. Miller, J. M., et al., Ristocetin in the Treatment of Seven Selected Difficult Cases, In Press, Antibiotics Annual, 1958-59.
8. Asay, L. D., et al., Ristocetin Serum Levels in Children, In Press, Antibiotics Annual, 1958-59.
9. Schumacher, L. R., et al., Experiences with Ristocetin in Staphylococcal Pneumonia: Observations in 23 Cases, In Press, Antibiotics Annual, 1958-59.
10. Terry, R. B., Ristocetin in Children and Adults, In Press, Antibiotics Annual, 1958-59.

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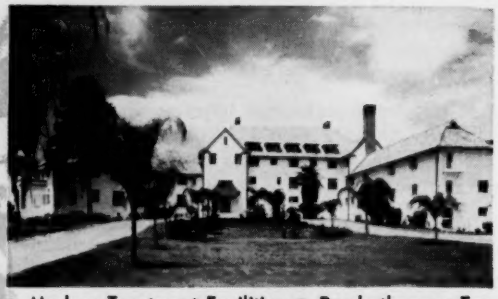

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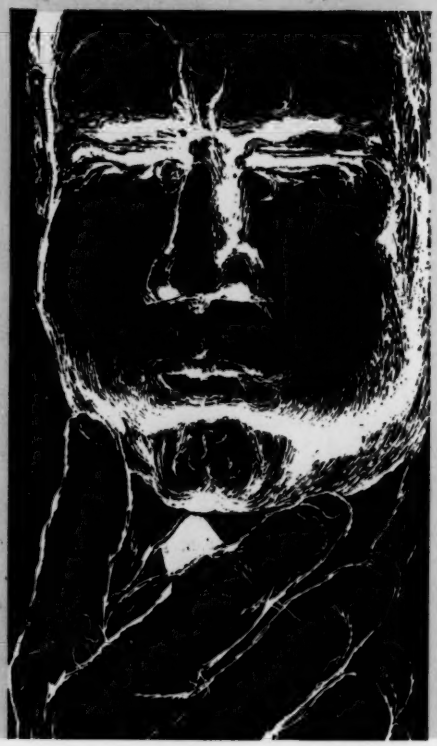

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Against all penicillin-sensitive organisms. When combined with Sulfas, COMPOCILLIN-VK is especially effective in treating mixed infections such as may occur in the respiratory or urinary tract.

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SUPPLIED

COMPOCILLIN-VK Filmtabs: 125 mg. (200,000 units), bottles of 50 and 100; 250 mg. (400,000 units), bottles of 25 and 100.

COMPOCILLIN-VK Granules for Oral Solution: In 40-cc. and 80-cc. bottles. When reconstituted, each tasty 5-cc. teaspoonful of cherry-flavored solution represents 125 mg. (200,000 units) of potassium penicillin V.

COMPOCILLIN-VK with Sulfas: Each Filmtab contains 125 mg. (200,000 units) of potassium penicillin V and 500 mg. of sulfonamides. At all pharmacies.

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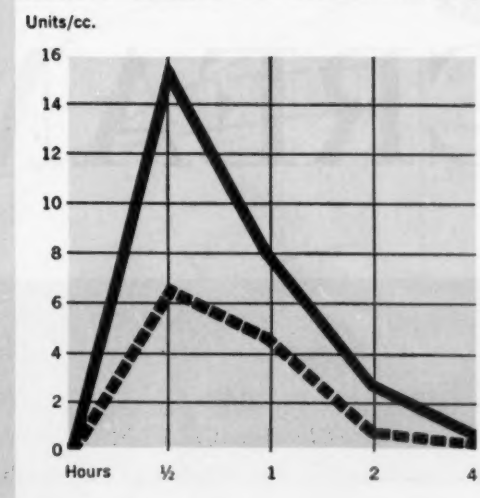


The highest levels of Filmtab Compocillin-VK.

The median levels of Filmtab Compocillin-VK.

Note the high upper levels and averages at ½ hour, and at 1 hour.

Doses of 400,000 units were administered before mealtime to 40 subjects involved in this study.

®FILMTAB—FILM-SEALED TABLETS, ABBOTT, PAT. APPLIED FOR.

ANNOUNCING

ONE OF THE MOST

SIGNIFICANT IMPROVEMENTS

IN ANTACID THERAPY

SINCE THE INTRODUCTION OF ALUMINUM HYDROXIDE IN 1929

NEW

CREAMALIN®

ANTACID TABLETS

Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

1. Neutralizes acid faster (quicker relief)

2. Neutralizes more acid (greater relief)

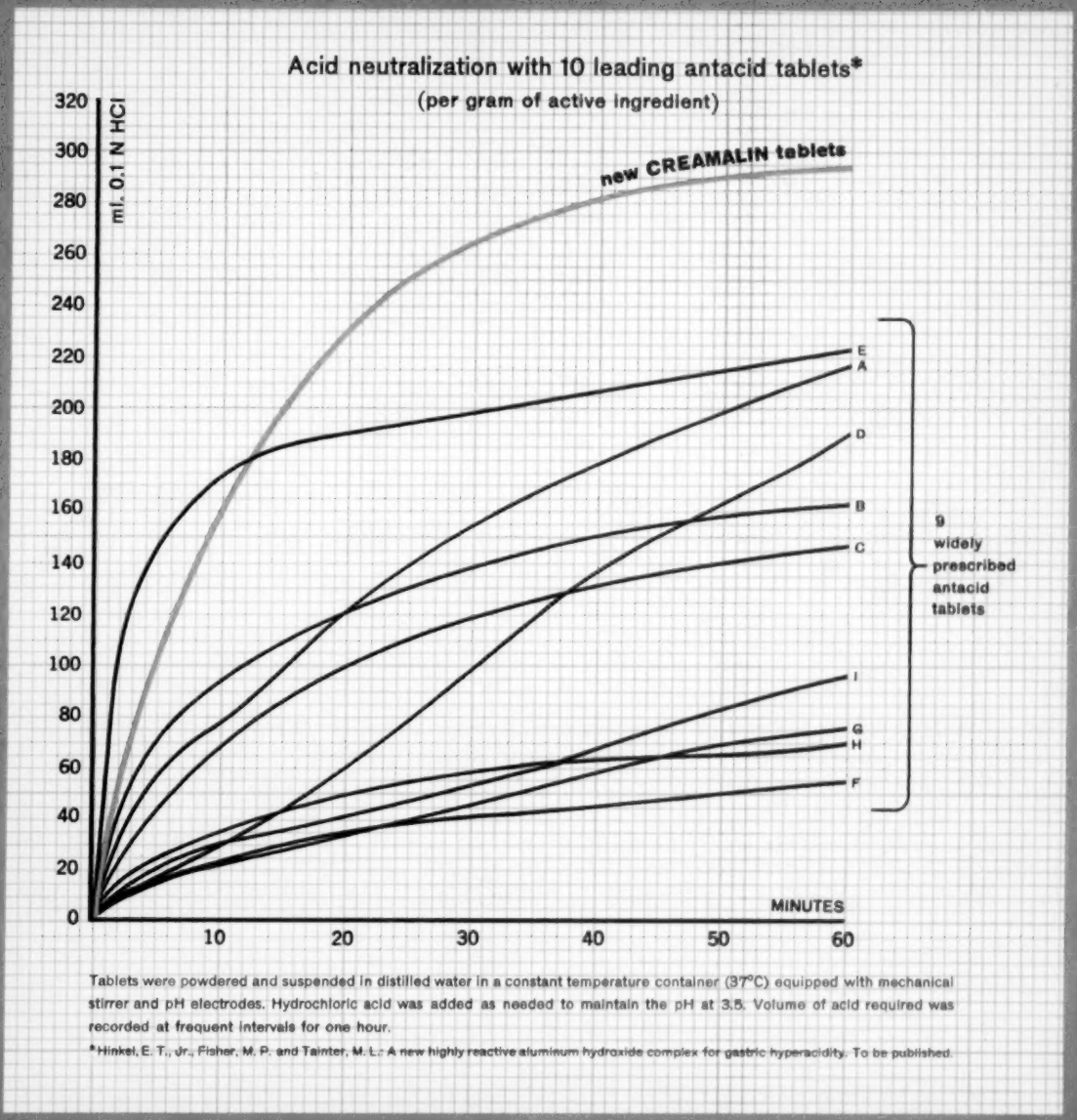
3. Neutralizes acid longer (more lasting relief)

4. No constipation · No acid rebound

5. More pleasant to take

CREAMALIN NEUTRALIZES MORE ACID FASTER

Quicker Relief · Greater Relief

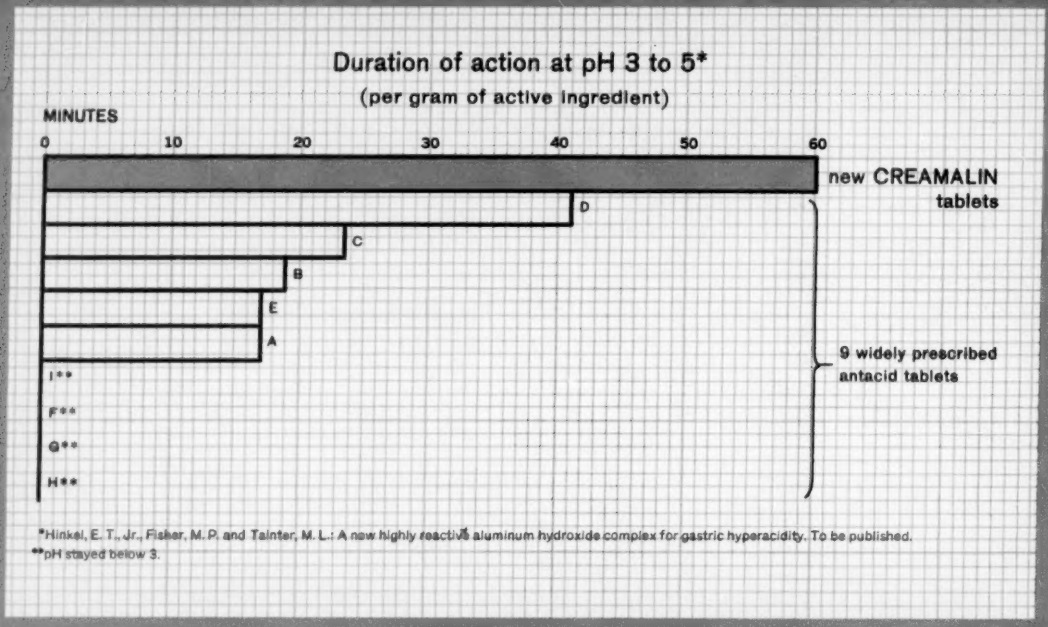


Tablets were powdered and suspended in distilled water in a constant temperature container (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric acid was added as needed to maintain the pH at 3.5. Volume of acid required was recorded at frequent intervals for one hour.

* Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.

CREAMALIN NEUTRALIZES MORE ACID LONGER

More Lasting Relief

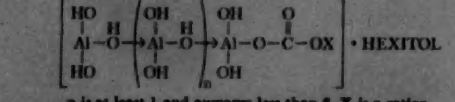


*Hinkel, E. T., Jr., Fisher, M. P. and Tainter, M. L.: A new highly reactive aluminum hydroxide complex for gastric hyperacidity. To be published.
**pH stayed below 3.

No chalky taste. New CREAMALIN tablets are not chalky, gritty, rough or dry. They are highly palatable, soft, smooth, easy to chew, mint flavored.

NEW

CREAMALIN® ANTACID TABLETS



n is at least 1 and averages less than 6. X is a cation.

• NO ACID REBOUND • NO CONSTIPATION • NO SYSTEMIC EFFECT

Composition: Each Creamalin Antacid Tablet contains 320 mg. specially processed, highly reactive, short polymer dried aluminum hydroxide gel, stabilized with hexitol, with 75 mg. magnesium hydroxide.

Adult Dosage: Gastric hyperacidity – 2 to 4 tablets as necessary. Peptic ulcer or gastritis – 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed with water or milk, or allowed to dissolve in the mouth.

Supplied: Bottles of 50, 100, 200 and 1000.

Winthrop LABORATORIES · NEW YORK 18, NEW YORK

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Vitamin-Mineral Supplement Lederle

CAPSULES—14 VITAMINS—11 MINERALS

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Lederle

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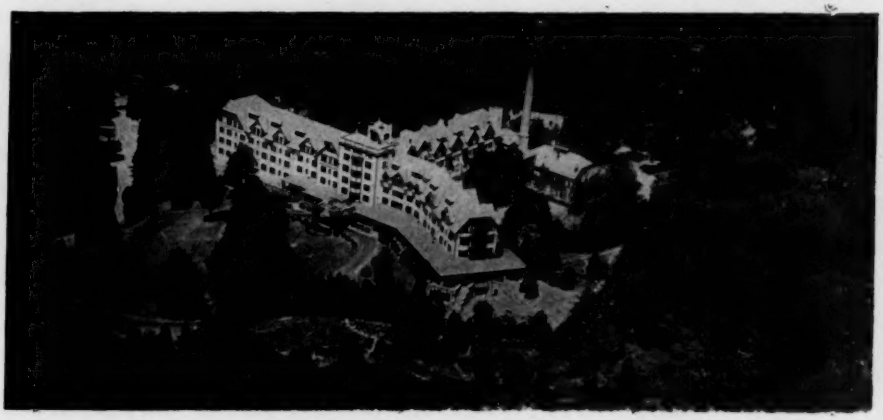
ESTABLISHED — 1916

ASHEVILLE NORTH CAROLINA



An Institution for the diagnosis and treatment of Psychiatric and Neurological illnesses, rest, convalescence, drug and alcohol habituation.

Insulin Coma, Electroshock and Psychotherapy are employed. The Institution is equipped with complete laboratory facilities including electroencephalography and X-ray.

Appalachian Hall is located in Asheville, North Carolina, a resort town, which justly claims an all around climate for health and comfort. There are ample facilities for classification of patients, rooms single or en suite

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A workhorse "mycin" for common infections

respiratory infections

prompt, high blood levels

consistently reliable and reproducible blood levels

minimal adverse reactions

With well-tolerated CYCLAMYCIN, you will find it possible to control many common infections rapidly and to do so with remarkable freedom from untoward reactions. CYCLAMYCIN is indicated in numerous bacterial invasions of the respiratory system—lobar pneumonia, bronchopneumonia, tracheitis, bronchitis, and other acute infections. It has been proved effective against a wide range of organisms, such as pneumococci, H. influenzae, streptococci, and many strains of staphylococci, including some resistant to other "mycins." Supplied as Capsules, 125 and 250 mg., vials of 36; Oral Suspension, 125 mg. per 5-cc. teaspoonful, bottles of 2 fl. oz.

new

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Triacetyloleandomycin, Wyeth

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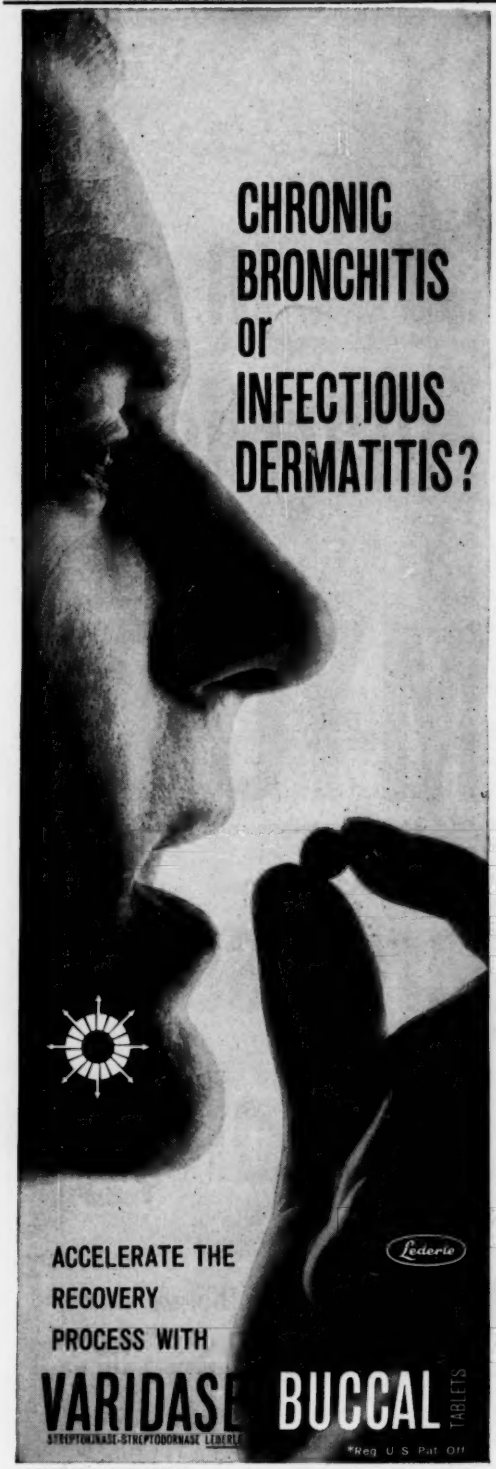

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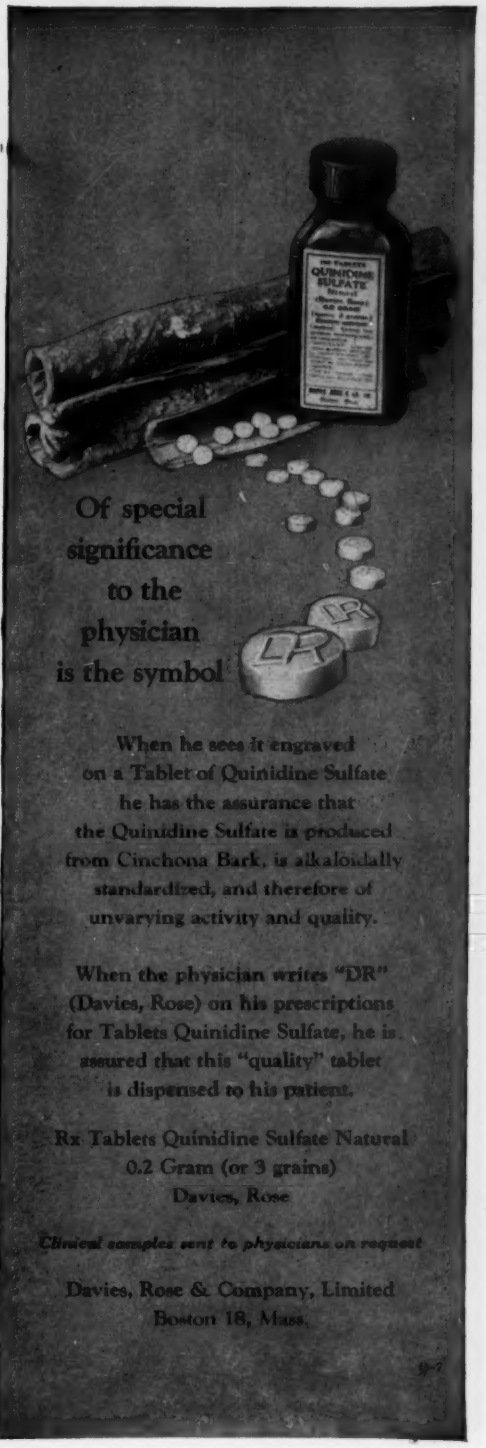
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When he sees it engraved
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from Cinchona Bark, is alkaloidally
standardized, and therefore of
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MORE THAN 16 MILLION DOSES ADMINISTERED WITH SAFETY AND EFFICACY.

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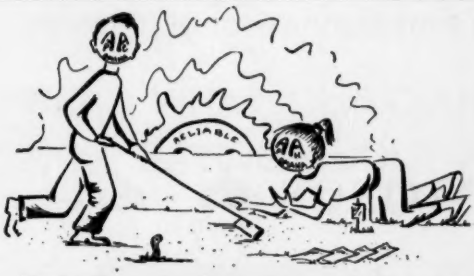

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provides therapeutic levels . . . for 24 hours . . . with low incidence of sensitivity reactions . . .

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Sulfamethoxypyridazine Lederle

0.5 Gm. TABLETS/NEW ACETYL PEDIATRIC SUSPENSION

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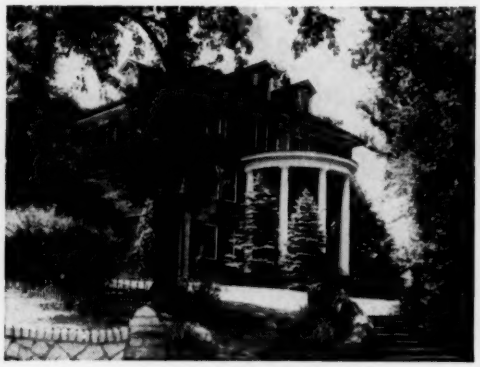
Founded In 1904

ASHEVILLE, NORTH CAROLINA

Affiliated with Duke University



A non-profit psychiatric institution, offering modern diagnostic and treatment procedures—insulin, electroshock, psychotherapy, occupational and recreational therapy—for nervous and mental disorders.

The Hospital is located in a 75-acre park, amid the scenic beauties of the Smoky Mountain Range of Western North Carolina, affording exceptional opportunity for physical and emotional rehabilitation.

The OUT-PATIENT CLINIC offers diagnostic service and therapeutic treatment for selected case desiring non-resident care.

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running noses

and open stuffed noses orally

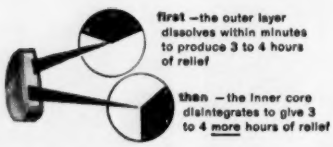
with TRIAMINIC, the oral nasal decongestant

- in nasal and paranasal congestion
- in sinusitis
- in postnasal drip
- in allergic reactions of the upper respiratory tract

safer and more effective than topical medication

- reaches *all* respiratory membranes systemically
- avoids "nose drop addiction"
- presents no problem of rebound congestion
- provides longer-lasting relief

Relief with Triaminic is prompt and prolonged because of this special timed-release action . . . beneficial effect starts in minutes, lasts for hours.


first —the outer layer dissolves within minutes to produce 3 to 4 hours of relief
then —the inner core disintegrates to give 3 to 4 more hours of relief

Each* TRIAMINIC *Tablet provides:

Phenylpropanolamine HCl . . .	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

One-half of this formula is in the outer layer, the other half is in the core.

Dosage: One tablet in the morning, mid-afternoon and in the evening, if needed.

Triaminic®

Also available: For the occasional patient who requires only half dosage: timed-release TRIAMINIC JUVELETS. Each Juvelet is equivalent to ½ of a Triaminic Tablet.

For those patients who prefer liquid medication: TRIAMINIC SYRUP. Each 5 ml. tsp. of this palatable syrup is equivalent to ¼ of a Triaminic Tablet.

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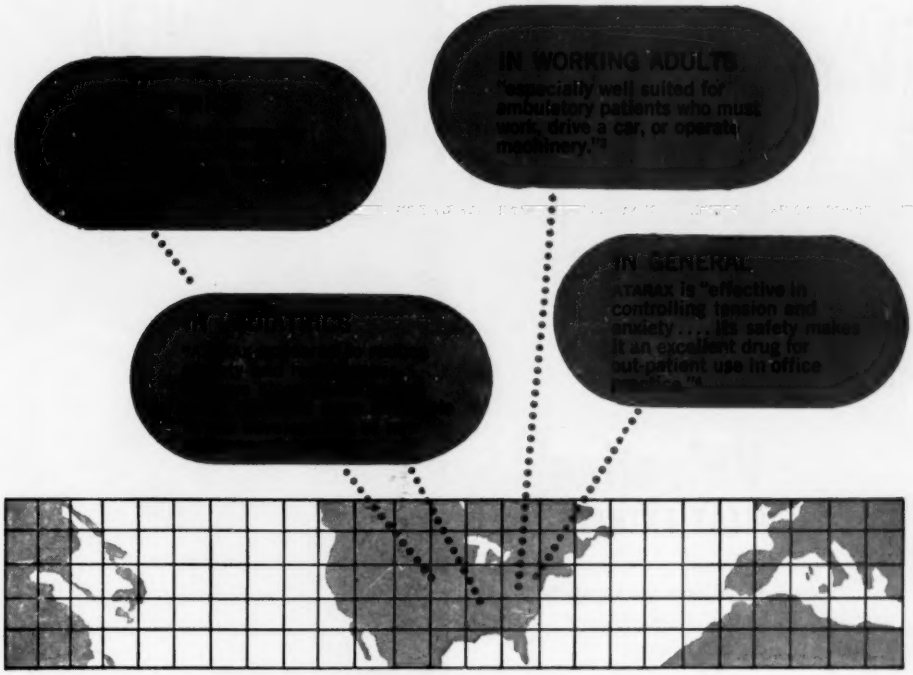
re-evaluating tranquilizers?

READ WHAT CLINICIANS ARE NOW SAYING ABOUT ATARAX®

(brand of hydroxyzine)


IN WORKING ADULTS
"especially well suited for ambulatory patients who must work, drive a car, or operate machinery."[3]
IN GENERAL
ATARAX is "effective in controlling tension and anxiety . . . its safety makes it an excellent drug for out-patient use in office practice."[4]

INVESTIGATORS AGREE ON OPTIMAL ATARAX DOSAGES

For childhood behavior disorders	10 mg. tablets Syrup	3-6 years, one tablet t.i.d. over 6 years, two tablets t.i.d. 3-6 years, one tsp. t.i.d. over 6 years, two tsp. t.i.d.
For adult tension and anxiety	25 mg. tablets Syrup	one tablet q.i.d. one tbsp. q.i.d.
For severe emotional disturbances	100 mg. tablets	one tablet t.i.d.
For adult psychiatric and emotional emergencies	Parenteral Solution	25-50 mg. (1-2 cc.) intramuscularly, 3-4 times daily, at 4-hour intervals. Dosage for children under 12 not established.

Supplied: Tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.

References: 1. Smigel, J. O., et al.: J. Am. Ger. Soc., in press. 2. Freedman, A. M.: Pediat. Clin. North America 5:573 (Aug.) 1958. 3. Ayd, F. J., Jr.: New York J. Med. 57:1742 (May 15) 1957. 4. Menger, H. C.: New York J. Med. 58:1684 (May 15) 1958. 5. Coirault, M., et al.: Presse méd. 64:2239 (Dec. 26) 1956. 6. Bayart, J.: Presented at the International Congress of Pediatrics, Copenhagen, Denmark, July 22-27, 1956.

ATARAX®

Rx PFIZER

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Science for the World's Well-Being

Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

through vomiting or diarrhea—

Valentine's
MEAT EXTRACT

stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

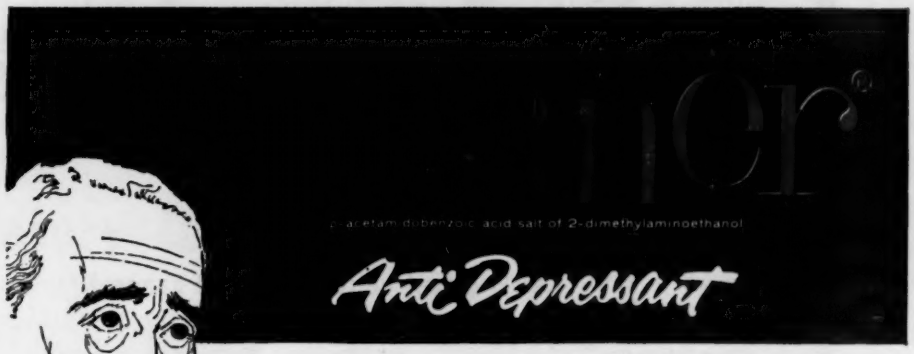
Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

VALENTINE Company, Inc.
RICHMOND 21, VIRGINIA

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

In Mild Depression



Do Not confuse it with tranquilizers

'Deaner' must not be confused with tranquilizing or sedative drugs which may aggravate depression. On the contrary, 'Deaner' is often used to counteract drug-induced depression.

'Deaner' is valuable as an emotional normalizer in many situations other than depression, such as behavior problems with agitation. Nor should 'Deaner' be considered an ordinary stimulant. Its gentle action differs from that of other stimulants in that it leads to increased useful energy and alertness without the undesirable side effects of the amphetamine-like drugs.

Literature and bibliography available upon request.

Deaner a totally new molecule, offers a new type of alleviation in depression, fatigue states and many other emotional disturbances. Its physiologic effectiveness as a safe central nervous system stimulant is attributed to its activity as a probable precursor to acetylcholine.

Deaner leads to better ability to concentrate, increased daytime energy, sounder sleep (with less sleep needed), and a more affable mood.

Deaner acts gently, gradually, and its effects are prolonged... without causing hyperirritability... without loss of appetite... without elevating blood pressure or heart rate... without sudden letdown on discontinuance.

Deaner is valuable in the treatment of children, especially those whose performance is impaired by behavior problems, whose attention span is too short, and who are emotionally unstable, unpredictable, and unadaptable.

Dosage: Initially, 1 tablet (25 mg.) in the morning. Maintenance dose, 1 to 3 tablets; for children, ½ to 3 tablets. Three to four weeks of therapy may be required for maximum benefit.

Riker Northridge, California

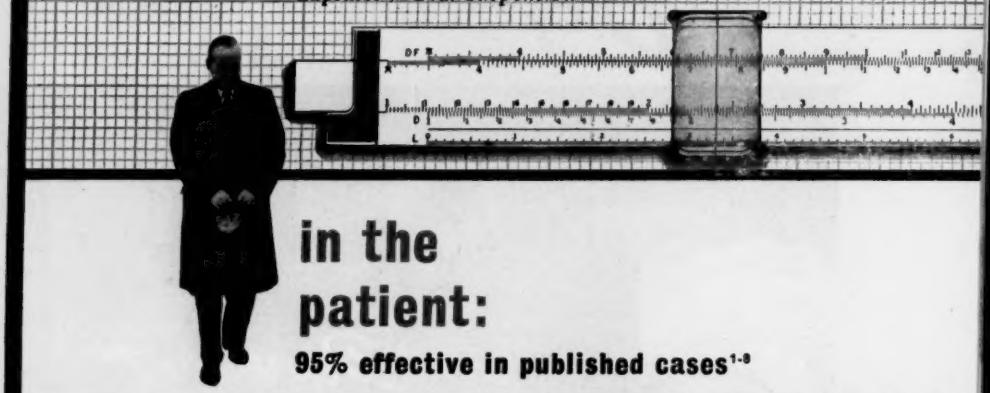
PRONOUNCED TAY-O

Rx Tao*

(triacetyloleandomycin)

Capsules / Oral Suspension

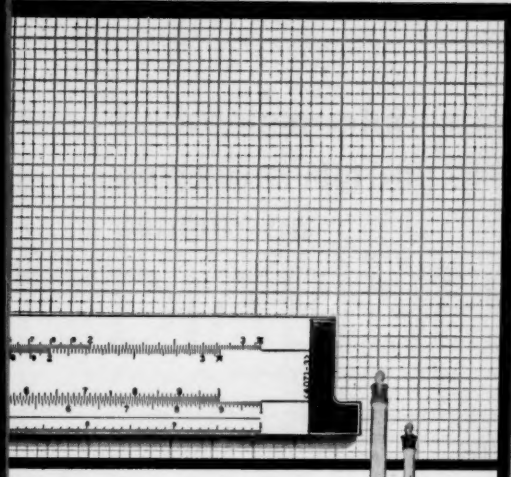
designed for superior control of common Gram-positive infections



in the patient:

95% effective in published cases[1-8]

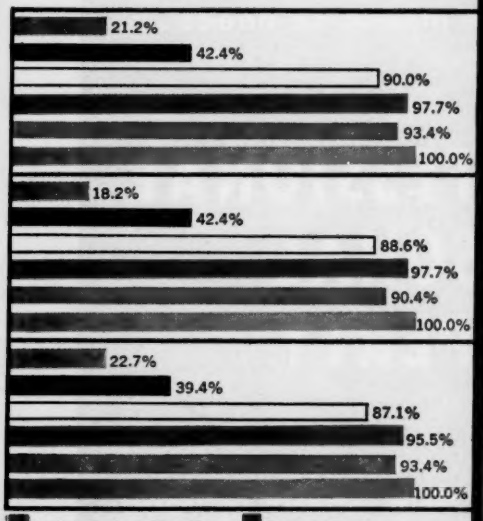
Conditions treated	No. of Patients	Cured	Improved	Failure
ALL INFECTIONS	558	448	80	30
Respiratory infections	258	208	31	19
Pharyngitis and/or tonsillitis	65	58	5	2
Pneumonia	90	66	17	7
Infectious asthma	44	38	–	6
Otitis media	31	29	2	–
Other respiratory (bronchitis, bronchiolitis, bronchiectasis, pneumonitis, laryngotracheitis, strep throat)	28	17	7	4
Skin and soft tissue infections	230	191	38	1
Infected wounds, incisions and lacerations	41	33	8	–
Abscesses	51	43	8	–
Furunculosis	58	51	6	1
Acne, pustular	43	28	15	–
Pyoderma	19	19	–	–
Other skin and soft tissue (infected burns, cellulitis, impetigo, ulcers, others)	18	17	1	–
Genitourinary infections	28	16	3	8
Acute pyelitis and cystitis	10	8	2	–
Urethritis with gonorrhea or cystitis	8	8	–	–
Pyelonephritis	4	1	–	3
Salpingitis	5	1	1	3
Pelvic inflammation with endometriosis	1	1	–	–
Miscellaneous (adenitis, enteritis, enterocolitis, subacute bacterial endocarditis, fever, hematoma, staphylococcus carriers, osteomyelitis, tenosynovitis, septic arthritis, acute bursitis, periarthritis)	42	30	8	4



in the laboratory:

over 90% effective against resistant staph

COMPARATIVE TESTS BY THREE METHODS (DISC, TUBE DILUTION, CYLINDER PLATE) ON 130 STAPHYLOCOCCI[9]



Percentage of organisms inhibited by the range of concentrations listed for each antibiotic.

Other Tao advantages:

Rapidly absorbed—stable in gastric acid,[7] TAO needs no retarding protective coating

Low in toxicity—freedom from side effects in 96% of patients treated; cessation of therapy is rarely required

Highly palatable—"practically tasteless"[7] active ingredient in a pleasant cherry-flavored medium.

Dosage and Administration: Dosage varies according to the severity of the infection. For adults, the average dose is 250 mg. q.i.d.; to 500 mg. q.i.d. in more severe infections. For children 8 months to 8 years, a daily dose of approximately 30 mg./Kg. body weight in divided doses has been found effective. Since TAO is therapeutically stable in gastric acid, it may be administered without regard to meals.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

References: 1. Koch, R., and Asay, L. D.: J. Pediat., in press. 2. Leming, B. H., Jr., et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 3. Mellman, et al.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 4. Olansky, S., and McCormick, G. E., Jr.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 5. Shubin, H., et al.: Antibiotics Annual 1957-1958, New York, N. Y., Medical Encyclopedia, Inc., 1958, p. 679. 6. Isenberg, H., and Karelitz, S.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 7. Wennersten, J. R.: Antibiotic Med. & Clin. Therapy 5:527 (Aug.) 1958. 8. Kaplan, M. A., and Goldin, M.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958. 9. Truant, J. P.: Paper presented at the Symposium on Antibiotics, Washington, D. C., Oct. 15-17, 1958.

Tao dosage forms— for specific clinical situations

Tao Pediatric Drops

For children—flavorful, easy to administer.

Supplied: When reconstituted, 100 mg. per cc. Special calibrated droppers—5 drops (approx. 25 mg.) and 10 drops (approx. 50 mg.). 10 cc. bottle.

Tao-AC (Tao analgesic, antihistaminic compound)

To eradicate pain and physical discomfort in respiratory disorders.

Supplied: In bottles of 36 capsules.

Taomid® (Tao with triple sulfas)

For dual control of Gram-positive and Gram-negative infections.

Supplied: Tablets, bottles of 60. Oral Suspension, bottles of 60 cc.

Intramuscular or Intravenous

For direct action—in clinical emergencies.

Supplied: In 10 cc. vials.

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Science for the World's Well-Being

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Convenient information for physicians starting diabetic patients on

DIABINESE

simple once-a-day dosage in practice

During the initial control period, the patient should check his urine at frequent intervals, and report at least once weekly for review of symptoms, physical examination, urine and/or blood examination for glucose.

The New Patient *(no previous antidiabetic therapy)*

1. Initial daily dose 500 mg. (2 tablets of 250 mg. each) with breakfast.

2. In elderly patients, initial dose 250 mg. (1 tablet) daily.

3. CONTROL PERIOD

(a) If blood sugar reaches normal levels after three to seven days, or if glycosuria disappears, lower daily dose of 500 mg. to a level between 250 mg. (1 tablet) and 375 mg. (1½ tablets of 250 mg.) with breakfast daily. In elderly patients, dosage may be reduced to as low as 100 mg.

(b) If hyperglycemia or glycosuria persists or develops, increase the daily dose from 500 mg. to 625 mg. (2½ tablets of 250 mg.) with breakfast daily. In elderly patients, dosage should be increased from 250 mg. according to patient response.

(c) Continue weekly adjustments during first month of therapy until maintenance dose has been established. Adjustments below 250 mg. daily are best made in steps of 100 mg. (one 100 mg. tablet). The maintenance dose may occasionally be as low as 100 mg. (one 100 mg. tablet daily) or, rarely, as high as 1.0 Gm. (four 250 mg. tablets) daily. Do not exceed daily dose of 1.0 Gm.

Transfer of Patient from Insulin

1. If patient is taking 40 or less units of insulin daily and gives no history of severe or "brittle" diabetic response, discontinue insulin and replace with DIABINESE as in The New Patient.

2. Complete control period as for The New Patient. Priming ("loading") doses should not be used.

3. If patient is taking more than 40 units of insulin daily, or shows evidence of severe or brittle diabetes, reduce insulin dose by 50 per cent and initiate DIABINESE therapy as for The New Patient. Further reduction of insulin dosage depends on patient response.

Transfer of Patient from Other Oral Medication

Where less than satisfactory control has been achieved with other oral medication, or where a change to once-a-day dosage is desired, DIABINESE may be successfully substituted. Such a transfer may be made by discontinuing previous oral medication, substituting DIABINESE, and continuing control period as for The New Patient. Avoid priming doses.

The clinical safety of DIABINESE has been established by more than two years' trial. By adherence to the above dosage schedule, side effects of DIABINESE will generally be infrequent, mild, and transient.

Pfizer

DIABINESE®

brand of chlorpropamide

once-a-day dosage

THE MOST EFFECTIVE ORAL ANTIDIABETIC AVAILABLE

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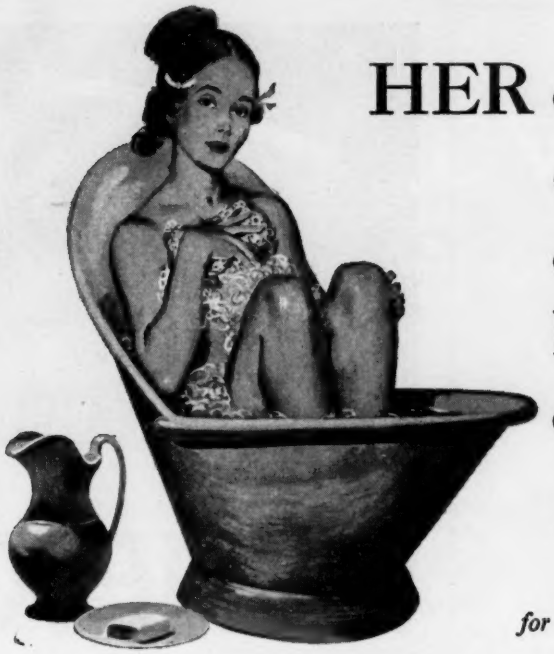

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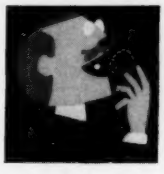

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CHLOROMYCETIN SUCCINATE is a soluble ester of CHLOROMYCETIN that can be administered intramuscularly, intravenously, or subcutaneously. Highly soluble in water or other aqueous parenteral fluids, CHLOROMYCETIN SUCCINATE solution is easily prepared for use by recommended parenteral routes in a wide range of concentrations. Tissue reaction at the site of injection is minimal,[1] permitting continuous daily dosage, even in pediatric patients.[3]

RAPID, EFFECTIVE BLOOD LEVELS

CHLOROMYCETIN SUCCINATE is rapidly hydrolyzed by body esterases and produces effective blood and tissue concentrations of CHLOROMYCETIN within a short time.[1] Although the intravenous route provides high immediate serum concentrations, after four hours the blood levels of CHLOROMYCETIN for all three routes are about equal, and effective concentrations are maintained for eight hours.[2]

WIDE-SPECTRUM ANTIMICROBIAL EFFECTIVENESS

CHLOROMYCETIN SUCCINATE, providing broad-spectrum antimicrobial effectiveness, may be used whenever CHLOROMYCETIN is indicated. It has produced effective response in respiratory, gastrointestinal, and rickettsial infections.[3-5] Because of the rapid, effective blood levels of CHLOROMYCETIN provided, it is especially useful in *Hemophilus influenzae* meningitis, in certain septicemias, typhoid fever, and other *Salmonella* infections.[3,5]

TYPICAL CLINICAL EXPERIENCE WITH CHLOROMYCETIN SUCCINATE

Type of infection	Number of Patients	RESULTS Excellent to Good	Fair	Poor
Respiratory[3,4]*	32	32		
Shigella dysentery[2]	14	14		
Enteritis[2]	10	6	2	2
Bacteremia[3,5]	5	5		
Meningitis[3,5]	4	3		1**
Rocky Mountain spotted fever[3,5]	2	2		
Ear abscess with cellulitis[4]	1	1		
Lung abscess[4]	1			1
Typhoid fever[5]	1	1		
TOTALS	70	64	2	4

*Includes 15 patients who were administered CHLOROMYCETIN SUCCINATE by nebulization under intermittent positive pressure breathing.

**Patient was hydrocephalic at birth; cerebrospinal fluid was sterile at time of death.

WELL TOLERATED

CHLOROMYCETIN SUCCINATE is well tolerated, even by small children. Signs of irritation at injection sites have been few.[1-5] Its relative freedom from irritation makes it possible to use CHLOROMYCETIN SUCCINATE for prolonged periods in patients who are not able to take oral medication.

DOSAGE AND ADMINISTRATION—*Adults:* 1 Gm. every six to eight hours. *Children:* 100 mg. per Kg. of body weight per day in divided doses at six- to eight-hour intervals. The total dose in children should not exceed the adult dose of 1 Gm. given at any single injection, with exception of treatment of *Hemophilus influenzae* meningitis in which higher doses are employed.

In all cases, severity of infection and clinical response to therapy should be the guiding factors determining the proper dosage schedule. Premature and full-term newborn infants require special dosage supervision. For details see literature.

SUPPLY—CHLOROMYCETIN SUCCINATE (chloramphenicol sodium succinate, Parke-Davis) is supplied in Steri-Vials,® each containing the equivalent of 1 Gm. chloramphenicol; packages of 10.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately, or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

REFERENCES—(1) Glazko, A. J., *et al.*, in Welch, H., & Martí-Ibañez, F.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 792. (2) Unpublished data: Research Laboratories, Parke, Davis & Company, 1958. (3) Ross, S.; Puig, J. R., & Zaremba, E. A., in Welch, H., & Martí-Ibañez, F.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia, Inc., 1958, p. 803. (4) Payne, H. M., & Hackney, R. L., Jr.: *ibid.*, p. 821. (5) McCrumb, F. R., Jr.; Snyder, M. J., & Hicken, W. J.: *ibid.*, p. 837.

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